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SPIDERS

OF THE

MARPTUSA GROUP

OF THE

FAMILY ATTIDÆ.

BY

George W. and Elizabeth G. Peckham.

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SPIDERS OF THE MARPTUSA GROUP.

GEORGE W. AND ELIZABETH G. PECKHAM.

Preface.

In the following paper we have attempted to classify the spiders formerly included under Marptusa and a few related genera. The group is so rich in closely allied species, and the genera run into each other so gradually, that to get a satisfactory classification it is necessary to make very close distinctions. We have formed twelve new genera.

We describe twenty-nine new species. We also re-define a few old species, which are generic types, the descriptions of which are not easily obtainable.

We have had at our disposal large collections from North, Central and South America, and from the West Indies, as well as from Europe, North Africa, Madagascar and Australia; and smaller collections from India, Japan and the Malay Archipelago.

We are very deeply indebted to M. Eugène Simon for his generous assistance in obtaining spiders from many parts of the world, and to Mr. Herbert H. Smith for the use of his large South American collection. We wish also to express our thanks to Mr. W. E. Broadway, who has sent us collections from Trinidad which are exceedingly valuable, from their containing not only many different species, but large numbers of individuals of each species; to Mr. B. K. Miller for some Japanese spiders, and to Mr. H. F. Wickham for a collection from the Bahama Islands.

The measurements are given in millimeters.

MARPTUSA THORELL.

Plate VIII., Figs. 1—1*b*, and 2—2*b*.

Spiders rather large and flat; abdomen large and wide, with central longitudinal light band. Colors usually dull.

The cephalothorax is long, wide, flat and low. It is widest behind the dorsal eyes. The sides are more or less rounded, and are parallel as far as the second row of eyes. The quadrangle of the eyes is about one-fourth wider than long, is equally wide in front and behind, or a little wider in front (in M. millerii, slightly wider behind), and occupies very little more than one-third of the length of the cephalothorax. The eyes of the first row are small. This row is straight, or a little curved. The middle eyes are close together and are about twice as large as the lateral, which are usually well separated from them.

The second row is half-way between the first and third rows, or a little nearer the first. The dorsal eyes are smaller than the lateral and form a row which is plainly narrower than the cephalothorax at that place. These eyes are placed plainly on the upper surface of the cephalothorax, not on the sides, and are much further from each other than from the lateral borders.

The legs are usually 1423 in the male and 4132 in the female, the second and third pairs being very nearly equal.

This genus stands at the head of the group. It is most likely to be confused with Breda, as the colors, markings and general appearance are very similar, but Breda is not quite so flat either in the cephalothorax or the abdomen, and has the middle eyes of the first row much larger and more prominent, while the cephalic part is relatively a little longer, occupying nearly two-fifths of the cephalothorax. In Mendoza the species are smaller and are not at all flattened, and the quadrangle of the eyes is wider behind. The shape of the cephalothorax differs from that of Epinga.

It is also near Menemerus, but in this latter genus the species are somewhat smaller, while the cephalothorax is higher, and not so flat, and is dilated on the sides. The cephalic part is relatively a little longer in Menemerus, occupying nearer two-fifths than one-third, and the third row of eyes is nearly as wide as the cephalothorax at that place, the eyes being about equally distant from each other and from the lateral borders, instead of much further from each other, as in Marptusa.

It differs from Bavia in being flat and in being longer in proportion to its width. Bavia has the sides and back of the thoracic part rounded and the abdomen is narrow, rounded, and tapering behind.

Marptusa is easily distinguished from Icius, as in the latter genus the species are much smaller and the cephalothorax is not so much flattened above, both cephalic and thoracic parts being somewhat inclined from the dorsal eyes.

We have, in our collection, eight species belonging to the genus Marptusa. These are mucosa Cl., the type (Marpissa mucosa Simon, Arachnides de France, Vol. III., p. 25), from France and Holland; melanognathus Luc. (Menemerus melanognathus Peckham, N. A. Spiders of the Family Attidæ, p. 82), from Japan, Madagascar, Mauritius (Attus muscivorus Vinson, and Attus nigro-fuscus Vinson), Canary Islands, Santarem, Brazil, French Guiana (Attus planus Taez.), Guatemala and Florida; also familiaris Hentz (Marptusa familiaris Peckham, N. A. Attidæ, p. 80); californica P. (N. A. Attidæ, p. 81); pomatia (Marpissa pomatia Wlk., Simon's Arachnides de France, Vol. III., p. 26), from Southern Europe; and the four new species described in this paper, magna, agricola, broadwayi and millerii.

MARPTUSA MAGNA SP. NOV.

Plate VIII., Figs. 3—3*a*.

♂. Length, 10. Length of cephalothorax, 4.3; width of cephalothorax, 3.2.

♀. Length, 12. Length of cephalothorax, 4.8; width of cephalothorax, 3.5.

Length of large female, 14.5.

The male is not quite mature.

Legs in both sexes, $\overline{41}$ $\overline{32}$; first and second pairs stoutest.

The cephalothorax is long for this genus. The quadrangle of the eyes is one-fourth wider than long, is a little wider in front than behind and occupies a little more than one-third of the length of the cephalothorax. The first row of eyes is straight; the middle eyes are sub-touching; the lateral, a little separated, the middle being less than twice as large as the lateral. The second row is a little nearer the first than the third. The third row is much narrower than the cephalothorax at that place. The falces are vertical, and moderately long and robust.

The cephalothorax is dark reddish-brown, blackish in the eye region. The dorsal surface is covered with white hairs, and there is a white band around the lower margin. On the eye region are numerous coarse, black hairs directed forward, and on each side, between the second and third rows of eyes, are two bunches of black bristles. The hairs just above the first row of eyes are rufous. In the female the sides of the abdomen are brown and the central portion is occupied by a herring-bone stripe of white, edged with black. In the male the entire dorsal surface of the abdomen is covered with white hairs, but the herring-bone stripe may be distinguished, as it is of a solider, purer white than the rest. In alcohol, the sides look brown, like those of the female. The legs are reddish-brown, not so dark as the cephalothorax. The palpi are reddish, the palpi and clypeus having many long, white hairs. The falces are dark brown, the under surface light brown.

We have one male and one female in the Smith collection, from Santarem, and several females from Central America (exact locality unknown).

MARPTUSA AGRICOLA SP. NOV.

Plate VIII., Figs. 4—4c.

♂. Length, 6.5. Length of cephalothorax, 3; width of cephalothorax, 2.

♀. Length, 8. Length of cephalotorax, 4; width of cephalothorax, 2.8.

Legs, ♂, $\overline{14}\ \overline{32}$; ♀, $\overline{41}\ 32$.

The quadrangle of the eyes is one-fourth wider than long, is wider in front than behind, and occupies two-fifths of the cephalothorax. The first row is bent, with the eyes all separated, the middle being less than twice as large as the lateral. The second row is about half-way between the first and third. The third row is much narrower than the cephalothorax at that place. The falces are short, vertical and rather stout, especially in the female; they are partly covered by some long, white hairs, which fall over them from the retreating clypeus.

The cephalothorax is dark reddish-brown, with a band of white hairs above the anterior eyes, and some white and rufous hairs on the sides and behind. The abdomen is dark brown with a white foliated band down the middle. The legs are dark brown, banded with black. The palpi are brown, fringed with brown hairs in the male and with white hairs in the female.

This species is shorter and broader than Marptusa magna, and its markings do not follow so closely, as that of magna, the regular Marptusa pattern. We have one male and one female in the Smith collection, from Brazil (Santarem).

MARPTUSA BROADWAYI SP. NOV.

Plate VIII., Figs. 5—5*b*.

♂. Length, 9. Length of cephalothorax, 3; width of cephalothorax, 2.

♀. Length, 8. Length of cephalothorax, 4; width of cephalothorax, 2.8.

Legs, ♂, 1423; ♀, $41\overline{32}$; first pair stoutest in both sexes.

The cephalothorax of the female is widened out more behind the eyes than that of the male. The quadrangle of the eyes is one-fourth wider than long, is wider in front than behind, and occupies two-fifths of the length of the cephalothorax. The first row is a little curved, with the eyes all separated, the middle being less than twice as large as the lateral. The second row is about half-way between the first and the third rows. The third row is much narrower than the cephalothorax at that place. The falces are vertical and moderately long and stout.

The male has the cephalothorax dark reddish-brown, with the eye region almost black. The hairs are all rubbed off, excepting a small bunch in the post-ocular depression and a few on the anterior sides. The abdomen is dark brown, with the upper central part occupied with a lighter colored herring-bone stripe, which is outlined in white. The legs and palpi are dark brown, the first and second pairs being almost black; they all have short, white hairs, and the first and second pairs have long, black spines. The palpi have short, white hairs on the patellæ and black hairs on the tarsi. The under surface is dark brown.

The female resembles the male in markings, but is much lighter in color. The cephalothorax is almost covered with a mixture of white and rufous hairs, and there are many long, white hairs around the eyes, and hanging down over the dark, iridescent falces. The abdomen is hairier than that of the male and has a decidedly rufous tinge. The upper surface and the lower sides do not differ much in color, but the herring-bone stripe is marked by a black line with a white line inside it. The palpi are light brown, covered with long, white hairs. The legs are light brown. The mouth parts are dark brown, almost black, but the rest of the under surface is light brown.

Of this species we have three females and two males, sent to us from the west coast of Trinidad, by Mr. W. E. Broadway.

MARPTUSA MILLERII SP. NOV.

Plate VIII., Figs. 6—6*a*.

♀. Length, 13. Length of cephalothorax, 5; width of cephalothorax, 3.8.

♂ (young). Length, 10.5.

Legs, ♂, 1$\overline{432}$; ♀, 41$\overline{32}$; in both sexes the first pair is the stoutest and the others are nearly equal.

The cephalothorax is low, broad and flat, with a depression behind the dorsal eyes. It is wider than the second and third rows of eyes in the cephalic part, but its widest point is in the anterior part of the thorax. The male is not so wide as the female.

The quadrangle of the eyes is one-fourth wider than long, occupies about two-fifths of the cephalothorax and is very slightly wider behind, which is an exceptional thing in this genus. The first row is slightly curved. The eyes are all separated, the middle being nearly twice as large as the lateral. The second row is about half-way between the other two. There is a tuft of black hairs just behind the lateral eye.

The males that we have are not quite mature, but the tarsus of the palpus is very much enlarged and palette-shaped.

The abdomen is rather broad and flat.

The coloration varies considerably, but that of the females does not differ from that of the young males. The whole flattened upper surface of the body is gray, while the sides throughout the length of cephalothorax and abdomen are black. Looked at closely, the gray color is the result of a mixture of white and red hairs. There is a narrow band of shorter hairs of the same colors around the lower edge of the cephalothorax. Around the eyes of the first row are rings of bright red hairs and some long, black hairs. The clypeus and the palpus of the female are covered with very coarse, long, white hairs. On the abdomen are two pairs of lighter colored spots, surrounded by dark rings. In some examples the pattern comes out more distinctly, the broad band down the middle of the abdomen being red, with the spots and the serrated edges pure white, and

showing also behind the spots two or three pure white chevrons. In these, also, the cephalothorax is red rather than gray. The legs are brown, the first pair a little the darkest, covered with black and white hairs.

In this species the widening out of the cephalothorax is more decided than in mucosa, but is not so marked as in familiaris.

We have received numerous examples from Tokio, Japan, through the kindness of Mr. Isao Ijima.

BREDA GEN. NOV.

Rather large spiders.

The cephalothorax is rather flat, and is one-third wider than long. It is moderately high; the sides are rounded and widen out plainly at the anterior end, and still more behind the dorsal eyes. The thorax has a small plate above, which rounds off on the sides and behind. The cephalic part is a little inclined forward. The quadrangle of the eyes is one-fourth wider than long, is equally wide in front and behind, or a little wider in front, and occupies a little less than two-fifths of the cephalothorax. The anterior eyes are large and prominent and form a straight row. The middle are sub-touching, and are barely twice as large as the lateral, which are a little separated from them. The second row of eyes is slightly nearer the first than the third. The dorsal eyes are about as large as the lateral and form a row which is narrower than the cephalothorax at that place.

In Breda the abdomen is not flattened, as in Marptusa, nor pointed behind, as in Epinga. Some of the species are much like Balmaceda, but in that genus the cephalothorax is flattened throughout nearly its whole length instead of having the thoracic part rounded, as in Breda.

Breda differs from all the allied genera, excepting Marptusa and Epinga, in being so wide at the anterior end of the cephalothorax that the second row of eyes is plainly narrower than the cephalothorax at that place. This peculiarity is much more exaggerated in milvina than in Lubomirskii.

We found this genus upon an old species, Marpissa milvina C. Koch, described in *Die Arachniden*, XIII., p. 65. It includes Marpissa Lubomirskii Taczanowski (Les Araneides du Perou, p. 219).

Although Koch's description and drawing of milvina are very good, we have thought it best to re-describe it, as we make it the type of a genus.

BREDA MILVINA C. KOCH.

Plate VIII., Fig. 7—7*b*.

♀ Length, 13. Length of cephalothorax, 5.8; width of cephalothorax, 4. Some females are only 8 or 10 mm. long.

Legs, 4$\overline{1}$32; the first, second and third are nearly equal in length; the first pair is the stoutest, the second next.

The quadrangle of the eyes is equally wide in front and behind. The middle eyes of the first row are fully twice as large as the lateral and stand out very prominently. The labium is as wide as long and is one-half as long as the maxillæ.

The cephalothorax is dark brown, with the eye region black. In the post-ocular depression and extending backward from it are some white hairs, and there is a narrow white band around the lower border. Around the eyes of the first row are some stiff, upright, black hairs. On the clypeus are some long hairs, which are white, tinged with copper color. The falces are dark red-brown, with a few white hairs. The palpi and legs are brown and hairy, the first pair being the darkest. The abdomen is brown and hairy. The sides are covered with white dots in the anterior part and with copper-colored dots behind. The upper dorsal surface has a longitudinal, angular band which is white in front and copper color behind, where it sends out some projections toward the sides. Underneath, near the spinnerets, there is, on each side, a distinct, round, white or copper-colored spot.

In the young male the brown on the abdomen is replaced by black; there are no dots on the sides, and instead of copper color, the posterior part of the dorsal band is brilliant orange-red. The palpi are pale.

C. Koch had this species from Bahia. We have numerous females from Santarem and two immature males from Trinidad, one from Port of Spain, and one from the East Coast.

Breda Lubomirskii is not so high a spider as milvina, and has the quadrangle of the eyes a little wider in front than behind. Its total length is 9.5 mm. The length of the cephalothorax, 4, and the width of the cephalothorax, 2.5. The relative length of the legs is 4$\bar{3}$12. We have a single female from Monterico.

EPINGA GEN. NOV.

Large spiders.

The cephalothorax is only moderately high; in two of our species (chapoda and barbarica) it has a wide, heavy look; in ornata it is narrower. It rises very slightly from the first row of eyes to the third row and then slopes backward to the posterior border. The sides begin to widen out just behind the lateral eyes, the widest point being just behind the dorsal eyes. The quadrangle of the eyes is only one-fifth or one-sixth wider than long. It is equally wide in front and behind, or is a little wider in front, and occupies two-fifths of the cephalothorax. The first row of eyes is straight, or a little curved. The middle are less than twice as large as the lateral. The second row is nearer the first than the third. The third row is plainly narrower than the cephalothorax at that place. The abdomen is cylindrical in front and pointed behind.

This genus is very close to Breda, which is also found in Brazil, the only marked difference being that in Breda the shape of the cephalothorax is different, the thoracic part being higher and falling only slightly at first and then much more steeply, while in Epinga there is one long curve from the dorsal eyes to the posterior border.

Epinga has not the flat look which distinguishes Marptusa, the upper line of the cepalothorax being plainly curved and the abdomen nearly cylindrical.

We have three species of this genus, chapoda and barbarica, new, and ornata (Bavia ornata P., New Attidæ from Guatemala, Proc. Nat. Hist. Soc. of Wisconsin, Dec., 1885, p. 8). This last species, although rather a large spider, is more slender and graceful than either of the others.

EPINGA CHAPODA SP. NOV.

Plate IX., Figs. 1—1*f*.

♂. Length, 12. Length of cephalothorax, 5; width of of cephalothorax, 3.5.

♀. Length, 14.5. Length of cephalothorax, 5; width of cephalothorax, 3.5.

Legs, ♂ and ♀, 1423; those of the first pair are stoutest and longest, and are longer in the male than in the female, while they are stouter in the female than in the male.

This is a large, heavy spider, with the abdomen cylindrical and about as wide as the cephalothorax. It is not so slender as Epinga ornata. The cephalothorax of the male widens out behind the dorsal eyes more than that of the female. The quadrangle of the eyes is one-fourth wider than long; is wider in front than behind, and occupies two-fifths of the cephalothorax. The anterior eyes are all separated; they form a slightly curved row, the middle eyes being a little less than twice as large as the lateral. There is a tuft of black hairs above the lateral eye and another to the side and below it. The second row is nearer the first than the third. The third row is not so wide as the cephalothorax at that place.

The palpus of the male has the patella and tibia nearly equal, and these two joints together are about two-thirds as long as the tarsus.

The falces are heavy and are slightly inclined forward. They are covered, in front, with long, coarse hairs.

This is a very showy spider. The females and immature males have the cephalothorax black, covered with red hairs and silver scales; no distinct pattern can be made out in our specimens, which are all more or less rubbed. The abdomen is red, with a wide, silver band around the anterior end and sides, and a silver band with indented edges down the middle. On each side, extending upward from the encircling band, are two oblique, silver bars. The only adult male in our collection is black, with patches of silver scales on the cephalothorax, and on the abdomen four or five transverse, silver bands, which become chevrons in the posterior part. These silver scales are highly iridescent, showing green, blue and red tints. The legs are dark, with silver patches, the first pair being the darkest.

From Chapoda, Brazil, in the Smith collection.

In this species the thorax widens out more perceptibly in the male than in the female, while in Epinga ornata the dilatation is much plainer in the female.

EPINGA BARBARICA SP. NOV.

Plate IX., Figs. 2—2*a*.

♀. Length, 15. Length of cephalothorax, 5.5; width of cephalothorax, 3.7.

Legs, $\overline{41}$ $\overline{23}$; first pair plainly stoutest, second next.

This is a large, heavy spider.

The quadrangle of the eyes is one-sixth wider than long, is almost equally wide in front and behind, and occupies two-fifths of the cephalothorax. The cephalothorax widens out considerably in the thoracic part. The sternum is long; the anterior coxæ are almost touching. The labium is longer than wide. The abdomen is large and rounded, more like Bavia than Marptusa.

The cephalothorax is dark brown. The cephalic plate is black with green and purple reflections. The middle of the abdomen is of a rather bright olive-green with a few iridescent scales—all that are left of the original covering. On each side is a longitudinal, brilliant red band, and, below this, a

band of snowy white. The first legs and the falces are black and somewhat iridescent, like the cephalic plate. The falces are well covered with black hairs, and, as they project a little forward, they are visible from above. The palpi and the second, third and fourth pairs of legs are light brownish-yellow, with white hairs. The mouth parts are black; the sternum coxæ and venter are light brown, the venter being marked, more or less distinctly, with three darker longitudinal lines.

We have three females from Port of Spain, Trinidad, sent to us by Mr. W. E. Broadway. In the shape of the cephalothorax it is much like Epinga chapoda, although the slope from the dorsal eyes to the posterior border is not so unbroken and gradual a curve, as the second half falls a little more abruptly than the first half, looking something like Breda. In ornata the curve is smooth and unbroken, but is shorter than in chapoda or barbarica.

DEZA GEN. NOV.

Spiders rather long and narrow, with sides nearly parallel. First legs stout and dark colored.

The cephalothorax is rather low. The cephalic and thoracic parts are flat, and are on the same plane. The sides are nowhere parallel, but are only slightly dilated, the widest point being just in front of the third row of eyes, so that both the second and the third rows are narrower than the cephalothorax. The sides contract very gradually behind, the narrowest point being at the posterior end. The abdomen is no wider than the cephalothorax and is cylindrical, the whole appearance being long and graceful, although not especially slender. The quadrangle of the eyes is only one-sixth wider than long, is wider in front than behind, and occupies nearly one-half of the cephalothorax. The anterior eyes are close together, in a straight row, and are prominent, especially the middle ones, which stand out conspicuously when the spider is looked at from above. The middle are more than twice as large as the lateral. The second row is nearer the first than the third row. The dorsal

eyes are larger than the lateral. The falces are rather long and stout. The fangs are stout. The maxillæ and labium are long.

This genus is founded on Salticus sumptuosus Perty (Attus sumptuosus Walck. and Thiania sumptuosa C. Koch). It is related to Bavia and Epinga, but has the sides of the cephalothorax more nearly parallel and the middle eyes of the first row larger and more prominent. Its long, rather narrow body and enlarged first legs give it, to some extent, a resemblance to certain species of Hyctia, but it is not so slender, and the middle eyes are larger than the lateral.

DEZA SUMPTUOSA PERTY.

Plate IX., Figs. 3—3*c*.

♂. Length, 11. Length of cephalothorax, 5; width of cephalothorax, 2.5.

♀. Length, 11.5. Length of cephalothorax, 4; width of cephalothorax, 2.7.

Relative length of legs, of female, 1423; of male, 1423; first pair stoutest, especially in the female.

The coloration exceeds in brilliancy that of any other species in this group. In the male the cephalothorax has for a ground color a covering of highly iridescent purple scales, on which is an elaborate pattern in iridescent silvery scales, with a prevailing tint of exquisite light green. This pattern, which will be best understood by a reference to the figure, consists of a large central spot just above the anterior eyes, which is connected on each side with a spot between the second and third rows of eyes; of a curved band behind each dorsal eye; and of a band which encircles the cephalothorax, beginning on the face at each side of the anterior middle eyes. These silvery scales, which in some lights show reflections of pink, blue and violet as well as of green, are found also on the front face of the falces, on the palpi and on the first pair of legs, which are darker in color than the other pairs. The abdomen has four transverse bands of these scales, which here, however, have rather a golden than a silvery tinge, alternating with four

bands of bright red. The posterior one of the iridescent bands is extended backward, in the middle line, to the spinnerets. The cephalothorax of the female is brown, with a lighter spot on the anterior thoracic part, and seems to have been covered with iridescent violet scales. The palpi and the second, third and fourth pairs of legs are light brown, the palpi having a bunch of white hairs on the tarsus. The first legs are bright brown, with some short, snow-white hairs. The abdomen is like that of the male.

We have one female from Santarem, Brazil, in the Smith collection, and one male from Port of Spain, Trinidad, sent us by Mr. Broadway.

BAVIA SIMON.

Plate IX., Figs. 4—4*b*.

The cephalothorax is moderately high. The cephalic part rises very slightly to the dorsal eyes. The thoracic part is separated from the cephalic by a deep groove, behind which it is level for about one-fourth of its length, and then falls quite steeply. The cephalothorax is about equally wide at the anterior and posterior ends, but is very much wider in the middle, the widest point being just behind the dorsal eyes; it is about as wide as long.

The quadrangle of the eyes is one-fourth wider than long, is wider in front than behind, and occupies a little less than one-half of the cephalothorax. The first row of eyes is bent; the eyes are all a little separated, the middle being twice as large as the lateral. The second row of eyes is plainly nearer the first than the third, and the third row is plainly narrower than the cephalothorax. The abdomen is narrow and small —a little higher and wider in front than behind.

Our only spider under this genus is a male of Bavia æriceps, Simon, Ann. Soc. Entomol. de France, 1877, p. 61, from Manilla. L. Koch described the same species from Australia, under the name Acompse suavis.

Bavia is related to Marptusa, Breda and Epinga, but the width of the cephalothorax, in proportion to its length, separates it from all of these.

BALMACEDA GEN. NOV.

Moderately long, slender spiders, with the cephalothorax and abdomen rather low and flattened.

The cephalic and thoracic parts are in the same plane. The sides are almost vertical in the cephalic part and are a little dilated just behind the dorsal eyes. The thoracic part does not fall until it has nearly reached the posterior border, and the sides of this part are rounded. The cephalothorax is narrower at the anterior than at the posterior end. The quadrangle of the eyes is from one-fourth to one-third wider than long, is equally wide in front and behind or wider behind than in front, and occupies a little more than one-third of the cephalothorax. The first row of eyes is straight, the middle eyes are touching or sub-touching, the lateral are sub-touching or a little separated; the middle are about twice as large as the lateral eyes. The second row is half-way between the first and third rows, or is nearer the first than the third. The dorsal eyes are further from each other than from the lower edge of the cephalothorax, and form a row which is not so wide as the cephalothorax at that place.

Balmaceda is near Hyctia on the one hand, and Rudra on the other. Its general appearance, however, at once separates it from Rudra, as it is by no means so low and flat; the abdomen, especially, being much thicker and more rounded. It is also easily distinguished from Hyctia, as the abdomen is flattened, not cylindrical; the cephalothorax has the appearance of being much wider in proportion to its length, and the sides are somewhat dilated instead of being parallel.

Balmaceda bracteata and Balmaceda modesta look very much, in general appearance, like Breda; but in Breda the caphalothorax, instead of being flattened, has the cephalic part inclined forward and the thoracic part rounding in all directions from the small thoracic plate.

We found this genus upon a new species from the east coast of Guatemala. It also includes a new species from Central America (punctata) and two old species, Marpissa modesta

Taczanowski (Araneides du Perou, p. 220), which we have from Amable Maria, and Marptusa bracteata L. Koch, from Australia (Arachniden Australiens, p. 1105), which agrees closely with the other species.

BALMACEDA PICTA SP. NOV.

Plate X., Figs. 1—1*f*.

♂. Length, 6. Length of cephalothorax, 2.8; width of cephalothorax, 2.

♀. Length, 6.8. Length of cephalothorax, 3; width of cephalothorax, 2.

Legs, ♂, 1432; ♀, 4132.

The quadrangle of the eyes is barely one-fourth wider than long; it is about equally wide in front and behind, and occupies a little more than two-fifths of the cephalothorax. The second row of eyes is nearer the first than the third. The third row is not so wide as the cephalothorax at that place. The cephalothorax is rounded on the sides and behind. The cephalic and thoracic parts are on the same plane. The falces are vertical, moderately stout and rounded.

This is a rather large species. The first legs are moderately long and are a little the stoutest, but are not so decidedly thickened as in Balmaceda punctata. The abdomen is more slender than the cephalothorax.

The general color is lightish brown. The cephalothorax is dark brown on the sides, with the central region reddish. There is a white band around the lower margin, a central white spot on the posterior thoracic slope, and some white hairs above on the cephalic part, and around the anterior eyes. The abdomen has the anterior half white or light brown on the sides and dark brown in the center, while the posterior half is dark brown with a herring-bone stripe in white or light brown down the middle. The legs are light brown with darker rings at the joints. The palpi are light and the falces dark brown.

We have two males and one female from Guatemala (east coast).

Balmaceda punctata is smaller, slenderer and more compact, with short, heavy first legs, and has on the abdomen two rows of yellow spots.

BALMACEDA PUNCTATA SP. NOV.

Plate VIII., Figs. 8—8c.

♂. Length, 5. Length of cephalothorax, 2.1; width of cephalothorax, 1.5.

♀. Length 6. Length of cephalothorax 2.2; width of cephalothorax 1.6.

Legs, ♂, $\overline{41}$ $\overline{32}$; first pair much the stoutest; ♀, 4132.

This is a low, flat, slender spider. The quadrangle of the eyes is one-third wider than long, slightly wider behind than in front, and occupies about two-fifths of the cephalothorax. The eyes of the first row are close together, in a straight line, the middle being nearly twice as large as the lateral. The second row is half-way between the first and third rows. The third row is nearly as wide as the cephalothorax at that place. The sides of the cephalothorax are nearly parallel. The cephalic and thoracic parts are on the same plane and are very flat above. The first legs are short, with the femur and tibia heavily thickened, giving a short, stubby look.

The cephalothorax and abdomen are black, nearly covered with white hairs. In the posterior half of the abdomen are first, a pair of round spots, next a pair of spots somewhat lengthened out, and finally, in front of the spinnerets, a pair of curved bands, all in bright yellow. The male has the legs and palpi brown, with white hairs, the first pair darker than the others. The female has the legs and palpi light reddish-yellow, the palpi being covered with white hairs. The clypeus is covered with white hairs. The falces are dark brown.

Central America (exact locality unknown).

OMURA GEN. NOV.

Spiders of medium size, with the cephalothorax flattened and the abdomen rounded.

The cephalothorax is moderately high, and is flat above, the cephalic and the anterior thoracic parts being on the same plane. The widest point is considerably behind the dorsal eyes, and it is sensibly contracted both in front and behind. The sides are nearly vertical in the cephalic part, but round out quite widely in the thoracic. The thorax is flat for about one-half its length, and then rounds off and falls rather steeply to the posterior margin. The quadrangle of the eyes is one-third wider than long, is almost equally wide in front and behind, and occupies two-fifths of the length of the cephalothorax. The first row is straight, or curved downward, with the eyes all close together, the middle being fully twice as large as the lateral. The second row is nearer the first than the third row. The third row is nearly as wide as the cephalothorax at that place. The abdomen is rather long and is pointed behind; it is rounded, not flattened. The labium is about as long as wide.

The species upon which we found this genus seems to lie between Sadala and Balmaceda. It is too large and heavy for the former genus and is not of the right shape for the latter. In Balmaceda the first row of eyes is straight and the cephalothorax is flat through nearly all its length; in Omura the first row is curved downward and the posterior slope of the cephalothorax begins at about the middle of the thorax. In Sadala the middle eyes of the first row are relatively larger than in Omura.

The shape of the abdomen is like that of Mendoza, but the body and legs are much smaller and more delicate. Mendoza, moreover, is found in Egypt, and Omura in Brazil.

OMURA CRUENTA SP. NOV.

Plate X., Figs. 2—2*c*.

♀. Length, 7.6. Length of cephalothorax, 2.6; width of cephalothorax, 2.

Legs, 4312, the third and first being nearly equal.

The first and second pairs are stoutest.

This is a medium-sized, handsome red spider. The falces are moderately long and stout and are vertical. The first and

second pairs of legs are plainly shorter and stouter than the third and fourth. The first row of eyes is a little curved.

The cephalothorax is covered with bright red hair, which stands out around the eyes of the first row. On the central thoracic part, just where it begins to slope backward, is a dark brown chevron, which points forward. The abdomen has a mottled appearance, from being thickly covered with a mixture of red, white and a few black hairs. The upper four spinnerets are short and close together. The lower four are longer, and the external one on each side is covered with white and red hairs. Underneath, the venter is mottled with black and white. The legs, palpi, sternum and mouth parts are light reddish-yellow; the falces are darker.

We have one female, in the Smith collection, from Brazil (Santarem).

OMURA PERITA SP. NOV.

Plate X., Figs. 3—3*a*.

♀. Length, 8.4. Length of cephalothorax, 3.2; width of cephalothorax, 2.2.

Legs, 4312, the first and second pairs being the stoutest.

This species is much like cruenta. The first row of eyes, however, is straight. The middle eyes are prominent and large, the lateral being placed further back. The falces are vertical, and moderately long and stout.

The spider has been dried and shriveled so that no very exact description is possible. The general color is medium brown, more or less blotched and spotted with black. The integument, in the eye region, is of a yellowish color, and there are some yellow hairs remaining around the eyes of the second and third rows. The hairs on the clypeus are white. The abdomen is dull brown, with speckles of black, and a broken white band down the middle, which is made neither of scales nor of hairs, but apparently of a thickened part of the integument. The drawing gives the spider as it appears under alcohol. The palpi are pale yellowish, with white hairs. The

legs are brown, the first pair being a little the darkest. The falces are dark brown. The labium is very dark, the maxillæ, sternum and coxæ much lighter.

A single female from Pumamarco.

MENDOZA GEN. NOV.

Plate X., Figs. 4—4*b*.

Spiders above medium size, but not very large.

The cephalothorax is only moderately high, and is flat on the upper surface throughout the greater part of its length, excepting a transverse depression behind the dorsal eyes. The posterior slope is gradual. The sides are slightly rounded out from above downward. The widest part is at the posterior end, from which point there is a gradual and very slight contraction to the anterior end.

The quadrangle of the eyes is one-third wider than long, is slightly wider behind than in front, and occupies about two-fifths of the cephalothorax. The first row of eyes is straight. The middle eyes are sub-touching. The lateral are slightly separated from them; the middle are less than twice as large as the lateral eyes. The second row is half-way between the first and third rows. The third row is narrower than the cephalothorax at that place. The lip is longer than wide.

The type of this genus is Attus memorabilis Cambridge (Spiders of Egypt, Proc. Zool. Society of London, 1876, p. 618, plate LX., fig. 110). The measurements of this species are as follows:

♀. Length, 11. Length of cephalothorax, 4.4; width of cephalothorax, 3.7. Relative length of legs, 4312, the first pair being the stoutest.

We have one female from Egypt.

Mendoza is nearest Marptusa, but is not so massive. The quadrangle of the eyes is wider behind (in Marptusa it is wider in front). The cephalic part is a little longer and it is not so wide across the middle of the cephalothorax. The sides are more nearly parallel than in either Marptusa or Menemerus,

and it also differs from Menemerus in general shape, being flatter and longer, both in cephalothorax and abdomen. From above it looks like Menemerus, but from the side it looks more like Marptusa. It is not so heavy as Breda.

MENEMERUS SIMON.

Plate X., Fig. 5—5*b*.

Spiders of medium size.

The cephalothorax is moderately high, is slightly convex, and is two-thirds as wide as long. It is widest behind the dorsal eyes, growing sensibly narrower from this point to the front.

The quadrangle of the eyes is one-third wider than long; it occupies two-fifths of the length of the cephalothorax and is equally wide in front and behind, or wider behind. The thoracic part begins to slant just behind the dorsal eyes.

The first row of eyes is straight. The middle eyes are sub-touching, the lateral a little separated. The middle are less than twice as large as the lateral eyes. The second row is usually a little nearer the third than the first row. The third row is a little narrower than the cephalothorax at that place, the eyes being about as far from each other as from the lateral borders.

Menemerus is most closely related to Marptusa, but the spiders are usually smaller, the upper surface of the cephalothorax is not so flat, the cephalic part being plainly inclined forward; there is a more decided dilatation behind the dorsal eyes; the cephalic part is relatively longer (two-fifths instead of about one-third of the cephalothorax), and the dorsal eyes are placed on the sides of the head, not on the upper surface.

The relations of Menemerus to Icius and Epiblemum are given under those genera. It is not so low and flat as Balmaceda. The cephalothorax is not so flat as in Breda, and does not widen out so much, the second row of eyes being about as wide as the cephalothorax at that place, while in Breda it is much narrower.

The type of this genus is Menemerus semilimbatus Hahn (Menemerus semilimbatus Simon, Arachnides de France, Vol. III., p. 32). We have also Menemerus falsificus Simon (*ibid.*, p. 34), Menemerus interemptor Cambridge (Spiders of Egypt, Proc. Zool. Society of London, 1876, p. 623), and Menemerus foliatus L. Koch (Arachniden Australiens, p. 1123).

EPIBLEMUM HENTZ.

Plate X., Figs. 6—6*b*.

Spiders of moderate size.

The cephalothorax is moderately high, slightly convex, and a very little dilated behind the dorsal eyes. The sides are almost vertical in front and rounded behind. The cephalic part is slightly inclined; the thoracic part falls gradually for two-thirds of its length and then steeply. The quadrangle of the eyes is about one-third wider than long; is equally wide in front and behind, and occupies a little more than one-third of the cephalothorax. The first row of eyes is straight; the eyes are sub-touching, the middle being nearly twice as large as the lateral. The second row is half-way between the first and the third. The third is not quite so wide as the cephalothorax at that place.

Epiblemum is most closely related to Icius, but the cephalic part is relatively shorter, occupying scarcely more than one-third of the cephalothorax. It differs from Menemerus in having the first row of eyes straight, in having the eyes all smaller and the lateral eyes relatively smaller than the middle (only about half as large). The cephalothorax, also, is not so high and does not slope so abruptly from the dorsal eyes nor widen so much in the thoracic part.

The type of this genus is Epiblemum scenicum Cl. (Araneus scenicus), which we have described in N. A. Attidæ, p. 76. We have also received from M. Simon the following species, which are well described in the third volume of his Arachnides de France, under the generic name Calliethera: zebranea C. K., infima E. S. and mutabilis Lc.

ICIUS SIMON.

Plate X., Figs. 7—7*b*.

Spiders small or of moderate size.

The cephalothorax is moderately high. Both cephalic and thoracic parts are slightly inclined, so that in profile it looks convex; the thoracic part falls only a little in its first half, and then slants abruptly. The sides are nearly parallel, there being only a slight enlargement behind the dorsal eyes.

The first row of eyes is straight or slightly curved. The middle are nearly twice as large as the lateral eyes. The second row is half-way between the first and third or a little nearer the first. The third row is as wide, or nearly as wide, as the cephalothorax at that place, the eyes being further from each other than from the lateral borders. The quadrangle of the eyes is from one-third wider than long to nearly twice as wide as long; it is a little wider behind than in front, and occupies about two-fifths (nearly one-half) of the cephalothorax.

Icius closely resembles Epiblemum, in general shape, but the cephalic part is relatively longer, occupying nearly one-half of the length of the cephalothorax, while in Epiblemum it occupies about one-third.

It is also near Menemerus. In this latter genus, however, the cephalothorax is higher, and widens more perceptibly behind the dorsal eyes; the thoracic part slopes more steeply from the dorsal eyes; and the lateral eyes of the first row are relatively larger, being about two-thirds as large as the middle eyes.

Of this genus we have Icius (Icelus) notabilis C. Koch (Arachnides de France, E. Simon, Vol. III., p. 57); Icius lineatus (Mævia lineata C. K.), described in N. A. Attidæ, p. 45; Icius elegans (Attus elegans ♀ and Attus superciliosus ♂ Hentz), which we have described in North American Attidæ, p. 37, under Dendryphantes; Icius striatus Wlk., described in Simon's Arachnides de France, Vol. III., p. 59; Icius hartii Emerton, New England Attidæ, Trans. Conn. Acad., Vol. VIII., Oct., 1891, and a new species, wickhamii, from the Bahamas.

ICIUS WICKHAMII SP. NOV.

Plate X., Figs. 8—8*b*.

♂. Length, 3. Length of cephalothorax, 1.7; width of cephalothorax, 1.3.

Legs, 1423; first pair stoutest.

This is a small species, of which we have only two males. The first row of eyes is slightly curved. The second row is nearer the first than the third. The third row is just about as wide as the cephalothorax at that place. The quadrangle of the eyes is one-third wider than long. The falces are short and wide—almost square. The mouth parts are short, the maxillæ rounded, and the labium truncated.

This seems to have been a handsome little spider, but has been badly rubbed. The integument is black, with patches of white hairs. There are rings of bright red hairs around the anterior eyes, and the abdomen has a curved band of white hairs around the anterior end. The first legs, the palpi and the falces are bronze-brown. The other legs are pale. All the legs have black longitudinal bands running from the proximal end of the patella to the terminal end of the metatarsus. The mouth parts and anterior coxæ are dark brown, the sternum and venter black, and the second, third and fourth pairs of coxæ colorless.

This spider, found at Eleuthera in the Bahamas, was sent to us by Mr. H. F. Wickham, for whom we have named it.

PSEUDICIUS SIMON.

Plate XI., Figs. 1—1*b*.

Rather long and narrow spiders of medium size.

The cephalothorax is low and rather long, sometimes nearly twice as long as wide. It is a little the widest in the middle of the thorax, the anterior end being plainly narrowest. The sides are nearly vertical in the cephalic part, but are rounded out in the thoracic. The upper surface is almost flat, but in most cases there is a very gradual slope behind the dorsal eyes. The posterior slope is gradual.

The quadrangle of the eyes is one-third wider than long, is equally wide in front and behind or wider behind (usually plainly wider behind) and occupies two-fifths of the cephalothorax, or a little less. The first row of eyes is straight. The middle eyes are close together, the lateral sometimes a little separated. The middle are twice, or nearly twice, as large as the lateral. The second row is half-way between the first and third rows, or is a little nearer the first. The third row is as wide, or very nearly as wide, as the cephalothorax at that place.

In Pseudicius the cephalothorax is longer and narrower than in Icius, and the cephalic part is not inclined. It differs from Menemerus in being lower, flatter, narrower and not so much dilated, and in having the cephalic part level and the abdomen rather long and narrow.

The type of Pseudicius is (Dendryphantes) encarpatus Wlk., described in Simon's Arachnides de France, Vol. III., p. 42. We include in this genus Attus binus Hentz, described under the genus Menemerus by Mr. Emerton in his New England Attidæ, Trans. Conn. Acad., Vol. VIII., Oct., 1891; Marptusa radiata Grube, described by M. Simon in his Arachnides de France, Vol. III., p. 28; two new species, oblongus, from Brazil, and cognatus, from Japan, and Icius piraticus P., N. A. Attidæ, p. 49.

PSEUDICIUS OBLONGUS SP. NOV.

Plate XI., Figs. 2—2*a*.

♀. Length, 11. Length of cephalothorax, 4; width of cephalothorax, 2.3.

Legs, 1423; first pair stouter and darker colored than the others.

The cephalothorax is low and long; it is narrowest in front and widens gradually from that point to the anterior thoracic part, where it is widest. The sides are nowhere vertical. The upper surface is perfectly flat through the cephalic and two-thirds of the thoracic part, except for a slight depression that separates the two, and then falls in a short, gradual slope to the margin. The upper surface of the thorax is nar-

rower than that of the caput, the thoracic plate being obtusely rounded behind. The quadrangle of the eyes is one-third wider than long, is equally wide in front and behind and occupies two-fifths of the length of the cephalothorax. The anterior eyes are large and form a straight row; they are a little separated from each other, and the middle are twice as large as the lateral. The second row is a little nearer the first than the third. The third row is narrower than the cephalothorax.

The abdomen is long and rather slender, narrowing slightly behind. The falces are moderately long; they are stout, and obliquely directed forward, and have several teeth on the inner edge of each. The maxillæ are long and heavy. The labium is as wide as long, and is half as long as the maxillæ. The sternum is oval.

The upper surface of the cephalothorax seems to have been covered with white hairs. Orange-colored hairs cover the posterior slope and the upper sides, and grow thick and long around the eyes of the first row. The lower sides have a wide band of white hairs, and there is a black line around the lower edge. The integument of the upper surface is black, with iridescent reflections. Just behind the post-ocular depression is a large spot of light brown, which becomes conspicuous when the hairs are rubbed off.

The integument of the abdomen is fawn color, with two parallel, longitudinal black stripes. The fawn-colored part is covered with white, and the black part with orange hairs. There are a good many long, white hairs which project forward around the anterior end of the abdomen. The falces are dark reddish-brown, overhung with long, white hairs from the clypeus and having themselves a thin covering of white hairs and short fringes of brownish-yellow hairs on their inner edges. The first leg is dark reddish-brown, with one spine on the femur, one on the patella and a double row of heavy spines on the under surface of the tibia. The other legs are yellowish-brown, much lighter in tint than the first, none of them being very hairy. The mouth parts are almost black and are covered with brown hairs. The venter is brown, with white hairs;

in the central posterior part of the venter is a longitudinal black band; in the anterior part this band narrows and is bordered with dull gold color.

Of this species we have a single example, a female, from Santarem, Brazil.

PSEUDICIUS COGNATUS SP. NOV.

Plate XI., Figs. 3—3*a*.

♀. Length, 8.4. Length of cephalothorax, 3.2; width of cephalothorax, 2.2.

Legs, 1432; the second and third not far from equal. First pair plainly stoutest, and of a darker color than the others.

The whole spider is long and narrow. In the cephalic part the cephalothorax is moderately high and the sides slant inward toward the lower edge. There is a transverse depression behind the dorsal eyes, behind which the thoracic part remains on the same plane as the cephalic for about half its length, and then slopes rather gradually to the posterior border. The quadrangle of the eyes is one-third wider than long, is wider behind than in front, and occupies two-fifths of the cephalothorax. The first row of eyes is straight, the middle eyes of this row are close together and are fully twice as large as the lateral eyes, which are a little separated from them and are placed further back. The second row is half-way between the first and third. The third row is as wide as the cephalothorax at that place. The whole cephalothorax is long and narrow, the narrowest point being at the anterior end, from which place it widens gradually to near the posterior end.

The abdomen is long and narrow, and is slightly wider in front than behind.

The first leg has the femur, patella and tibia enlarged. There are two rows of spines on the under side of the tibia and metatarsus, those of the outer row being much smaller and weaker than those of the inner. The falces are vertical, and are long and strong.

The cephalothorax is black, with a thin covering of long, yellowish-white hairs. The abdomen is gray on the sides and down the middle, with two broken, dark-colored longitudinal bands. The first legs are dark brown with a reddish tint, and are well covered with white hairs. The other legs and the palpi are light yellowish-brown, the palpi and the clypeus being covered with long, white hairs. The falces are reddish-brown.

We have one female from Japan, the exact locality being unknown.

FUENTES GEN. NOV.

Spiders below medium size, with the cephalothorax rather narrow, with nearly parallel sides.

The cephalothorax is rather low and is flat (with the exception of the post-ocular depression) throughout the cephalic and nearly all of the thoracic part, sloping off rather steeply a little in front of the posterior border. The sides are nearly parallel, there being an almost imperceptible widening behind the dorsal eyes. The sides are vertical, or nearly vertical, in the cephalic part, but are slightly wider below in the thoracic. The quadrangle of the eyes is from one-fourth to one-third wider than long, is equally wide in front and behind and occupies two-fifths of the cephalothorax. The first row of eyes is straight, the middle being nearly twice as large as the lateral. The position of the eyes of the second row varies. They are sometimes nearer the lateral, and sometimes nearer the dorsal eyes. The dorsal eyes are rather larger than usual, and form a row nearly, if not quite, as wide as the cephalothorax at that place.

This genus, formed for a new species, pertinax, also includes (Icius) lineatus C. K., described in our N. A. Spiders of the Family Attidæ, p. 45.

FUENTES PERTINAX SP. NOV.

Plate XI., Figs. 4—4*f*.

♂. Length, 5.5. Length of cephalothorax, 2.2; width of cephalothorax, 1.5.

♀. Length, 7.5. Length of cephalothorax, 3; width of cephalothorax, 2.

Legs, ♂, 1423; ♀, 4123. The first pair is enlarged in both sexes; the other legs are slender.

A rather small species, with the abdomen long and narrow, with longitudinal bands.

The quadrangle of the eyes is one-fourth wider than long and is equally wide in front and behind. The second row of eyes is a little nearer the first than the third row. The falces are small, short and vertical. The maxillæ are more than twice as long as the labium. The sternum is oval.

The colors are nearly alike in the two sexes. The cephalothorax is very dark brown—black in the cephalic region, with patches of white hairs behind the dorsal eyes and a white ring around the lower border. There are some short, white hairs on the clypeus. The sides of the abdomen are light brown. The central region is dark brown or black, with two narrow, longitudinal white stripes running throughout its length, between which, at the posterior end, are some small, light chevrons. The first leg is dark brown excepting the metatarsus and tarsus. These joints, and all the other legs, are light yellowish-brown. In the male the palpi are dark brown, and in the female they are light. The falces are dark brown.

We have two females and one male from Bellize, British Honduras.

ITATA GEN. NOV.

The spiders of this genus are long and slender and have the cephalothorax rather low. The cephalic part is flat and slightly inclined; the thoracic part slopes quite steeply from the third row of eyes to the posterior margin, and this slant has a flattened surface, giving from behind a wedge-shaped appearance. The sides of the cephalothorax slope outward; their widest point is at or just behind the dorsal eyes, the dilatation being slight.

The quadrangle of the eyes is one-fourth wider than long and is wider in front than behind. It occupies two-fifths of the

cephalothorax. The first row of eyes is curved. The middle are fully twice as large as the lateral eyes, and are sub-touching, the lateral being a little separated from them, and placed further back. The second row is plainly nearer the first than the third. The dorsal eyes are almost equally distant from each other and from the lateral borders, and form a row which is not so wide as the cephalothorax at that place. The labium is much longer than wide. The abdomen is long, cylindrical and pointed, and, in the only two species that we have, is of a pale yellow color, the cephalothorax being some shades darker.

This genus is very close to Hyctia. The abdomen is the same, and the legs of the first pair are much the longest and heaviest, as in that genus. The cephalothorax, however, is of a different shape; the sides are not vertical nor parallel, and the thoracic part slopes from the third row of eyes, instead of being on the same plane as the cephalic. The cephalothorax, moreover, is higher. The quadrangle of the eyes occupies two-fifths, instead of one-third, of the length of the cephalothorax, and the middle eyes of the first row are more prominent and larger than in Hyctia, being fully twice as large as the lateral eyes.

We found this genus on a new species from New Grenada. It includes Dr. Taczanowski's Marpissa isabellina, Araneides du Perou, Bull. Soc. Imp. de Moscou, Tome LIII., p. 325.

ITATA VADIA SP. NOV.

Plate XI., Figs. 5—5*f*.

♂. Length, 8. Length of cephalothorax, 2.8; width of cephalothorax, 2.

♀. Length, 7.4. Length of cephalothorax, 2.5; width of cephalothorax, 1.8.

Legs, $\overline{14}32$, in both sexes. Those of the first pair are longest and stoutest and are darker in color than the others.

The falces are moderately stout; in the female they are not quite vertical and only moderately long; in the male they are longer and are plainly inclined forward.

In alcohol the abdomen and the second, third and fourth pairs of legs are pale yellow, almost white, while the cephalothorax and first pair of legs are much darker yellow, tinged with red.

The central anterior eyes are reddish-yellow, like the color of the cephalothorax. The other six are black and are placed on large, black spots. There is a good deal of snow-white hair on the cephalothorax, growing most thickly in a band above the anterior eyes, in lateral bands and in a central spot behind the dorsal eyes. The mouth parts and falces are brown, darker in the male than in the female; otherwise the under surface is very light yellow—almost white. The first legs are dark reddish-yellow, with a fringe of dark hairs, intermingled with spines, along the inner edge. The other legs are pale yellow. The palpi are pale yellow, only the distal joint being darkened. The clypeus has a distinct fringe of white hairs. The abdomen has, on the dorsum, four pairs of white spots, those on the anterior part being separated, while those on the posterior part approach each other and almost coalesce. In one specimen (the one shown in the drawing) there seems to have been a central white band, although a good deal of it is rubbed away. In another there seem to have been two narrow white bands, separated by a yellow space, down the middle. In all cases the white part consists of flat scales, and the bands or spots are broken by cracks or veinings which show the yellow color of the integument.

In color and appearance this species is much like Itata isabellina of Taczanowski, which is found in Peru. The female of the latter species, however, has the first leg plainly longer than the second, while in vadia they are nearly equal.

We have two males and three females from New Grenada.

HYCTIA SIMON.

Plate XI., Figs. 8—8*b*, and Figs. 7—7*b*.

Long, slender, delicate spiders.

The cephalothorax is long, low, flat and narrow, and is nearly twice as long as wide. The cephalic and thoracic parts

are on the same plane. The sides are vertical and almost parallel, widening a little behind the dorsal eyes.

The quadrangle of the eyes is one-fourth wider than long, is equally wide in front and behind, and occupies from one-third to two-fifths of the cephalothorax. The first row is straight or a little curved. The eyes are sub-touching or slightly separated. The middle eyes are almost twice as large as the lateral. The second row is about half-way between the first and the third. The dorsal eyes are smaller than the lateral eyes of the first row, and form a row which is as wide as the cephalothorax at that place.

The labium is longer than wide.

The narrow, parallel, vertical shape of the cephalothorax and the large middle eyes distinguish Hyctia from Marptusa. The flat dorsum separates it easily from Icius and Menemerus; and the greater length in proportion to its width from Holoplatys, Rudra and Balmaceda.

Hyctia is nearest Goleta and Itata. Goleta is even lower, and has the cephalothorax twice as long as wide, the middle eyes of the first row more than twice as large as the lateral, and the first row of eyes curved downward; while in Itata the sides are neither vertical nor parallel, and the thoracic part slopes from the dorsal eyes.

The type of this genus is Hyctia (Salticus) nivoyi Lucas, described in Simon's Arachnides de France, Vol. III., p. 20. We have also Hyctia canestrini Cn. et Pv., *ibid.*, p. 21, and Hyctia pikei P., N. A. Attidæ, p. 79.

SPADERA GEN. NOV.

The cephalothorax is low, and is long in proportion to the width. The sides are vertical in front, but slant out a little in the thoracic part; they are not far from being parallel, but there is a slight dilatation just behind the dorsal eyes, beyond which the cephalothorax narrows again. The cephalic plate is slightly inclined forward. The thoracic part does not slant for two-thirds of its length and then drops abruptly. The quadrangle of the eyes is about one-fifth wider than long, is

almost equally wide in front and behind, and occupies two-fifths of the length of the cephalothorax. The anterior eyes are small, in a straight row; they are close together. The middle are less than twice as large as the lateral eyes. The second row is half-way between the first and the third. The third row is nearly as wide as the cephalothorax in that place. The lip is longer than wide.

This genus is nearest Hyctia, but the body is not so long and slender as in that genus, the first legs are not so long and stout, the middle eyes of the first row are not nearly twice as large as the lateral, and the cephalothorax is not so flat nor are its sides quite parallel. Hyctia is more like Itata than like Spadera. The only similar genus in Madagascar is Padilla, which is marked off from Spadera by the position of the eyes and the shape of the cephalothorax.

SPADERA UNICA SP. NOV.

Plate XII., Figs. 1—1*e*.

♂. Length, 4.8. Length of cephalothorax, 2; width of cephalothorax, 1.2.

Legs, 14$\overline{32}$; first pair plainly stoutest.

The falces are short but stout and project obliquely forward. The fang is rather long. The maxillæ are rounded and are more than twice as long as the labium. The sternum is twice as long as wide. The femur, patella and tibia of the first leg are thickened, especially the femur.

The color of the cephalothorax is dark brown; the eye region is blackish. The upper surface is thinly covered with mixed red and white hairs. A wide, white band encircles the lower sides and below this is a black line. The clypeus and palpus are covered with white hairs. The abdomen is light brown, with a dark region down the middle, which consists of two triangular figures on the anterior and middle part and some rounded spots behind. There is a transverse, curved, white band at the anterior end of the abdomen, and another across the middle; and the brown spots at the posterior end are

surrounded by white. The legs are brown, the first pair being the darkest. The falces are dark brown. The under surface is dark brown, thinly covered with white hairs.

We have one male, from Madagascar.

HELVETIA GEN. NOV.

Rather small spiders, with the cephalothorax narrow and long and the abdomen rounded.

The cephalothorax is narrow, low and flat. The sides are vertical, widening from the anterior to the posterior end, with the posterior angles rounded. The cephalic and thoracic parts are on the same plane, and there is no fall behind until just above the posterior margin. The quadrangle of the eyes is equally wide in front and behind, is one-fifth wider than long and occupies two-fifths of the cephalothorax. The anterior row is curved downward, the eyes being sub-touching and rather small, the middle about twice as large as the lateral. The second row is about half-way between the first and third. The third row is about as wide as the cephalothorax at that place. The labium is longer than wide.

The cephalothorax in this genus is not so wide as in Spadera. It differs from Hyctia in having the sides of the cephalothorax wider behind instead of parallel, and in the first row of eyes being curved downward; it lacks, besides, the exaggerated length and slenderness of that genus.

HELVETIA SANTAREMA SP. NOV.

Plate XII., Figs, 2—2*d*.

♀. Length, 5.2. Length of cephalothorax, 2; width of cephalothorax, 1.

Legs, 4132; are short and almost equally stout.

The falces are rather long and stout for the size of the spider and are a little inclined forward.

The ground color is dark olive-brown. A central longitudinal band of snow-white hairs extends along the entire length of the spider from the anterior eyes to the spinnerets; and both cephalothorax and abdomen have snow-white bands

around the lower sides. In some cases the central band on the abdomen is broken into chevrons, as is shown in the drawing. There are some stiff, black bristles in the eye region. The venter is evenly, but not thickly, clothed with white hairs, and there are also white hairs on the sternum. The legs and palpi are light yellow. The falces are dark brown.

We have three females of this species from Santarem, Brazil.

ADMESTINA PECKHAM.

Plate XI., Figs. 6—6*b*.

Small spiders, with the cephalothorax narrow in front and rounding out widely in the thoracic part. First leg with femur and tibia thickened.

The cephalothorax is low and flat, widest opposite the middle of the thoracic part, more contracted in front than behind, and a little less than twice as long as wide. In front the sides are vertical, while behind they are rounded. The quadrangle of the eyes is nearly twice as wide as long, is a very little wider behind than in front, and occupies one-third of the length of the cephalothorax. The anterior row of eyes is curved; they are all close together, and the middle are twice as large as the lateral. The second row is nearer the first than the third. The dorsal eyes are a little larger than the lateral, and are plainly further from each other than from the lateral borders; they form a row which is as wide as the cephalothorax at that place. The labium is as wide as long. The abdomen is narrow and rather long.

While Admestina bears some resemblance to Hyctia, Helvetia and Spadera it is smaller and not so slender. As it is found only in the United States, it is not likely to be confused with other genera.

RUDRA PECKHAM.

Plate XII., Figs. 3—3*b*.

Spiders of medium size, or smaller.

General appearance broad, low and flat, both in cephalothorax and abdomen. First legs dark colored, elongated and thickened.

The cephalothorax is very low, flat and wide—two-thirds as wide as long. The widest point is behind the dorsal eyes. The sides are almost vertical. The cephalic and thoracic parts are on the same plane. The quadrangle of the eyes is nearly twice as wide as long, is equally wide in front and behind, or very slightly wider behind, and occupies about one-third of the cephalothorax. The first row is straight, or a little curved downward; the eyes are sub-touching, or slightly separated, the middle being less than twice as large as the lateral. The second row is half-way between the first and the third rows, or is slightly nearer the first. The third row is nearly as wide as the cephalothorax.

This genus differs from Goleta in the width of the quadrangle of the eyes and also in the broad cephalothorax and abdomen. In Holoplatys the cephalothorax is nearly twice as long as wide, although it is not at all slender, and the quadrangle is only one-fourth wider than long.

We have, of this genus, two new species and two old ones—Rudra geniculata P., Attidæ of Guatemala, Proc. Nat. Hist. Soc. of Wisconsin, Dec., 1885, p. 77, and (Attus) Wagæ Tacz. Araneides de la Guyane Française, p. 10.

RUDRA POLITA SP. NOV.

Plate XII., Figs. 4—4*a*.

♀. Length, 7. Length of cephalothorax, 3; width of cephalothorax, 2.

Legs, 1423; those of the first pair much the stoutest and longest.

The cephalothorax is long, low and wide. The cephalic part is very slightly inclined; otherwise the upper surface is almost flat throughout the entire length. The sides are a little rounded out in the thoracic part. The first row of eyes is straight; the middle are nearly twice as large as the lateral and are a little separated from them. The second row is very slightly nearer the first than the third. The falces are short, stout and vertical. The clypeus is very narrow. The labium is plainly longer than wide. The maxillæ are rounded and are

less than twice as long as the labium. The first leg has the femur very broad, and the tibia and metatarsus with a double row of stout spines.

This is the largest species of Rudra that we have, and the abdomen is not so flat as is usual in this genus. The cephalothorax is glossy reddish-brown, with a dark band around the sides, a dark central line over the thoracic part, a black line around the margin and black spots around the eyes. The marks on the abdomen recall those of Rudra geniculata, which is also from Guatemala. The lower sides are dark brown; the upper surface is pale, with a pattern of brown lines, one longitudinal, one down the middle, a wavy one on each side of this, and two or three chevrons in the posterior half. The clypeus is covered with white hairs. The first legs, palpi and falces are dark brown; the other legs are pale.

We have one female, from Guatemala.

RUDRA TENERA SP. NOV.

Plate XI[r], Figs. 5—5*a*.

♀. Length, 5. Length of cephalothorax, 2; width of cephalothorax, 1.4.

Legs, 1423; those of the first pair very much the longest and stoutest.

The cephalothorax is very low, and, excepting that there is a depression in the middle of the thorax, is perfectly flat throughout its entire length. The sides are vertical in front, but widen out a little behind the dorsal eyes. The eyes of the first row are close together in a straight line. The middle are not quite twice as large as the lateral. The second row is a little nearer to the first than to the third row. The third row is very nearly as wide as the cephalothorax at that place. The clypeus is so narrow as to be indistinguishable. The falces are very short and small, and are directed backward. The palpi are long and slender. The labium is longer than wide. The maxillæ are truncated, and are less than twice as long as the labium. The abdomen is flattened. The first legs are much enlarged, the other three pairs being equally stout. The femur

and tibia of the first leg, especially the tibia, are very stout and have a glistening iridescent appearance. The tibia has two rows of stout spines, which are continued on the metatarsus.

The cephalothorax is reddish-brown with a golden tinge; there is some light yellow hair around the eyes, and just behind the first row is a pair of small black spots. There is a black line around the lower margin. The abdomen is light brown, with some darker spots along the sides and two faint dark lines down the middle. In the center of each of the posterior four spots is a white dot, and as there are some white hairs left on the other spots and on the dark lines, it is probable that they were originally entirely covered with them. The legs of the first pair are brown, the femur and tibia being darker than the other joints and iridescent. The other legs are light yellow.

This species has the first leg much like that of Taczanowski's Chirothecia wrzesniowski, but there is no bunch of hairs on the tibia. We have one female from Santarem, Brazil.

HOLOPLATYS SIMON.

Plate XII., Figs. 6—6*b*.

Spiders extremely flat, but not very slender, of medium size or larger. General appearance heavier than Rudra.

The cephalothorax is very low and flat, the cephalic and thoracic parts being on the same plane. It is nearly twice as long as wide. The sides are almost parallel, there being a slight enlargement behind the dorsal eyes.

The quadrangle of the eyes is one-fourth wider than long, is equally wide in front and behind and occupies a little less than one-third of the cephalothorax. The first row of eyes is straight; the eyes are close together, and the middle are fully twice as large as the lateral. The second row of eyes is slightly nearer the first than the third. The third row is nearly as wide as the cephalothorax at that place.

Holoplatys is nearest to Rudra, but the cephalothorax is even flatter, and both the quadrangle of the eyes and the

cephalothorax, as a whole, are longer in proportion to their width.

Hispo and Holcolætis are near Holoplatys, but we have no representatives of these genera in our collection.

Of this genus we have (Marptusa) planissima L. K., Arachniden Australiens, p. 1100, which was made the type of Holoplatys by Simon in 1885, and (Marptusa) lencocomis L. K., *loc. cit.*, p. 1096. This latter species, although not so extremely flat and thin as planissima, agrees with it in its other characteristics.

GOLETA GEN. NOV.

Plate XII., Figs. 7—7*b*.

Goleta equals Ganesa P. 1885. The name Ganesa was preoccupied.

Small, low, flat spiders.

The cephalothorax is flat and very low, and is nearly twice as long as wide. It is a little contracted in front and behind, but the sides are nearly parallel. The sides are vertical in front, but widen out a little in the thoracic part. The abdomen is long, slender and pointed. The first legs are much thickened.

The quadrangle of the eyes is one-fourth wider than long, is equally wide in front and behind, and occupies one-third of the length of the cephalothorax. The first row of eyes is a little curved downward. The middle eyes are more than twice as large as the lateral, and they are all close together. The second row is half-way between the first and the third rows. The third row is not quite so wide as the cephalothorax at that place.

Goleta is close to Hyctia, but differs from it in having the cephalothorax lower and twice as long as wide, and in having the first row of eyes curved downward and the middle eyes of this row more than twice as large as the lateral. Itata has the first row straight or curved upward and is higher, not lower, than Hyctia. Goleta, moreover, is much flatter than Itata.

Goleta is nearest to Sadala, but has the cephalothorax lower, and longer in proportion to its width, and is also distinguished by having the first row of eyes curved downward.

Our only representative of this genus is the type Goleta (Ganesa) workmanii P., described in the Proceedings of the Natural History Society of Wisconsin for March, 1885.

ANOKA PECKHAM.

Plate XIII., Figs. 3—3*b*.

The cephalothorax is only moderately high, and is not much longer than wide; the sides widen out gradually from the lateral eyes to their widest point, which is behind the dorsal eyes; they slant outward more widely in the thoracic than in the cephalic part. The cephalic part is inclined forward; the thoracic is level for two-thirds of its length and then falls rather steeply. The quadrangle of the eyes is one-third wider than long, is a little wider behind than in front, and occupies two-fifths of the cephalothorax. The first row of eyes is straight, with the middle eyes sub-touching, and less than twice as large as the lateral, which are a little separated from them. The second row is about half-way between the first and third rows. The third row is narrower than the cephalothorax at that place, the eyes being a little further from each other than from the lateral borders. The abdomen is long and slender.

We have species of Anoka from various parts of the United States, from Jamaica, St. Vincent, Barbadoes, Trinidad and New Grenada. They all resemble each other in a marked degree, even the patterns and colors being often reproduced. The relative length of the legs is 1423, or 1432, in both sexes. The males are more slender than the females, and have the first legs much longer and stouter than the others, and, usually, dark colored, the other legs being pale. The males, in all the species excepting mitrata, parallela and moneagua, have the falces long and horizontal; in moneagua and parallela they are oblique, and in mitrata the falces are vertical and the first legs pale. The mouth parts are always dark colored.

The only genus likely to be confused with Anoka is Sadala, but in this genus the shape of the cephalothorax is different, and the quadrangle of the eyes, instead of being wider behind

than in front, is equally wide in front and behind, or wider in front.

We include in this genus the type, Anoka vernalis P., Proc. Zool. Soc. of London, Nov. 21, 1893, p. 701; Icius (Epiblemum) palmarum Hentz, described in our Attidæ of North America, p. 46; Icius (Attus) mitratus Hentz, *ibid.*, p. 48; and three new species, parallela, moneagua and grenada. Attus morigerus Hentz is the female of mitrata; and Mævia pallida C. K. is a synonym of mitrata.

ANOKA GRENADA SP. NOV.

Plate XII., Figs. 8—8c.

♂. Length, 5.5. Length of cephalothorax, 2; width of cephalothorax, 1.8.

Legs, 1423; the second and third nearly equally long.

This species, of which we have only the male, has the quadrangle of the eyes one-third wider than long, a little wider behind than in front, and occupying two-fifths of the cephalothorax. The four anterior eyes are sub-touching, in a straight row, the middle being less than twice as large as the lateral. The second row is half-way between the first and third rows. The third row is about as wide as the cephalothorax at that place.

The spider is slender, with long, horizontal falces, which differ from those of vernalis in being broader and flatter, and in not tapering toward the extremity, while the fang has a single, instead of a double, curve. There are two teeth on the inner side of each falx, one on the upper and one on the lower edge. The legs of the first pair are much longer and stouter than the others and are pale, with brown blotches, while the others are entirely pale. Under alcohol the dorsal surface of the spider is white, with dark brown bands along the sides. Two brown bands begin at the dorsal eyes, and, approaching each other as they pass backward, are merged into one wide band on the anterior part of the abdomen, which extends to the spinnerets. Just behind the point of junction are two white spots, in the

brown color, and further back are several branches and enlargements, which are shown in the drawing. When the spider is dried the ground color is brown, and the bands are seen to consist of short white hairs. There are red rings around the eyes of the first row. The falces are brown, with white hairs along their outer edges; the fangs are pale. The clypeus is covered with white hairs. The palpi are white, with brown rings. The coxæ and sternum are white. The mouth parts dark brown. The venter is white, with an indistinct brownish band down the center.

One male, from New Grenada.

ANOKA MONEAGUA SP. NOV.

Plate XII., Figs. 9—9*e*.

♂. Length, 4.5. Length of cephalothorax, 2; width of cephalothorax, 2.8.

♀. Length, 5. Length of cephalothorax, 2; width of cephalothorax, 1.5.

Legs, ♂, 1423, the second and third being nearly equal. ♀, 1423.

This species resembles grenada in the disposition of the eyes, but the falces of the male are shorter, and, instead of being extended horizontally, they are directed obliquely forward; in shape, they are broad at the proximal end, narrow at the extremity, and flattened in front. There are three teeth along the inner edge. The fang is moderately long. The legs of the first pair are longer and stouter than the others in both sexes. In the male they have a row of stiff hairs along the inner side of the femur and patella, and a row of spines on the tibia and metatarsus. The falces of the female are short, broad and vertical. The first legs, in the females, have the stiff hairs not quite so pronounced as in the male, but have a double, in place of a single, row of spines on the tibia and metatarsus.

The general appearance of the male is dark colored, except the second, third and fourth pairs of legs, which are pale. The female has the first legs but little darker than the others, and has a light colored abdomen with dark markings.

Some of the females are much like vernalis, having speckles all over the abdomen, four dark dots, a dark, transverse line in front of the spinnerets, and, behind this line, two small chevrons. Others are more like mitrata, having two pairs of dark spots on the anterior and middle part of the dorsum and one large spot behind these and just in front of the dark, transverse line. The whole spider has a light ground color, thickly covered with white down, which is mixed with more or less orange or rufous color. In the abdomen this color appears in speckles. In the cephalothorax it is more evenly mixed with the white. Just back of the lateral eye, on each side, is a stiff, black bristle, which stands out sideways and which is enlarged at the end (mitrata also has bristles in this position). There is a black line around the lower border of the cephalothorax. The pattern on the abdomen, which is most distinct under alcohol, is identical with that of mitrata. There are three or four dark chevrons on a light ground, the first one being divided to form two spots and the two following ones consolidated. The legs of the female are white, tipped with black, the first pair being tinged with rufous. The palpi are white, the falces and mouth parts dark and the rest of the under surface white, the venter being covered with down.

The male (dry) has the cephalothorax bright brown, with a wide, white band on each side. There is a good deal of bright red down on the upper surface, in bands below the white bands, and around the eyes. When looked at from in front and a little to the side one sees a bright red band running back from the lateral eyes; above and below this are white bands, below the white is a dark band, then another white, then another dark. There are some small, black bristles behind the lateral eyes, but these are not so distinct as in the female. The abdomen is bright bronzy brown with a silvery sheen; on each side is a snow-white band, and below this, and contrasting with it, a velvety black band. The first legs, palpi, falces, mouth parts and sternum are dark brown; the fang is reddish; the other legs are pale, with black tips. The

anterior coxæ are brown, the others pale. The venter is dark brown with some white down.

Several males and females from Moneague, Jamaica.

ANOKA PARALLELA SP. NOV.

Plate XIII., Figs. 2—2*c*.

♂. Length, 5.5. Length of cephalothorax, 2; width of cephalothorax, 2.

Legs, 1423; first much the stoutest and longest.

This spider is a little below medium size, with long first legs, which are darker in color than the others.

The cephalothorax is short, wide and moderately high. The sides round out from the anterior end to the widest point, just behind the dorsal eyes, and then approach each other again. The eyes differ a little from those of grenada and moneagua, the first row being slightly curved, with the middle eyes twice as large as the lateral. The second row is nearer the first than the third, and the third row is not so wide as the cephalothorax at that place. The falces are stout and are directed obliquely forward.

The whole body is of a mahogany-red color, growing paler toward the posterior end of the abdomen. Encircling the sides of the cephalothorax and extending throughout the length of the abdomen are two wide bands of pure, silvery-white hair; the space between these bands, and the lower sides of the abdomen are covered with small, yellow scales. Under alcohol, an indistinct, blackish chevron and a pair of black spots are visible on the anterior part of the abdomen. Around the eyes of the first row are brilliant red hairs, and the clypeus is covered with glistening, silvery-white hairs. The first legs are bright mahogany-red above, shading into black beneath. The other legs are of a pale yellowish color. The falces are of a bright reddish-brown. The mouth parts are almost black.

One male, from Port of Spain, collected by Mr. W. E. Broadway.

PADILLA GEN. NOV.

Spiders a little below medium size. Males with first legs thickened and having two spines, or horns, on the falces.

The cephalothorax is low. It is narrow just in front, but broadens out widely, the widest point being considerably behind the dorsal eyes. This dilatation is more marked in the males than in the females. The sides slant outward, more widely in the thoracic than in the cephalic part. The upper surface is flat except for a rounded depression a little way behind the dorsal eyes. The posterior slope is short. The quadrangle of the eyes is one-third wider than long, is about equally wide in front and behind, and occupies barely two-fifths of the cephalothorax. The first row is straight, the eyes being close together and the middle fully twice as large as the lateral. The second row is nearer the first than the third. The third row is not so wide as the cephalothorax at that place.

We have two species of Padilla, armata and cornuta, both from Madagascar. The males of both these species have long spines, or horns, projecting from the falces. We have described cornuta as Icius cornutus, Proc. Nat. Hist. Soc. of Wisconsin, March, 1885, p. 30.

The genera that most nearly resemble Padilla, Anoka and Sadala, are found only in the Western Hemisphere. The only genus in Madagascar that it could be confused with is Spadera. Padilla, however, has the cephalic part flat, the quadrangle of the eyes one-third wider than long, and the middle eyes of the first row fully twice as large as the lateral; while in Spadera the cephalic part is inclined forward, the quadrangle of the eyes is only about one-fifth wider than long, and the middle eyes of the first row are less than twice as large as the lateral. Moreover, the males of Padilla have horns on the falces, which are lacking in Spadera.

PADILLA ARMATA SP. NOV.

Plate XIII., Figs. 1—1*h*.

♂. Length, 6. Length of cephalothorax, 3; width of cephalothorax, 1.8. Horn, 1.6.

Legs, 1423; first pair much the longest and much the stoutest.

♀. Length, 6.5. Length of cephalothorax, 2.3; width of cephalothorax, 1.8.

Legs, 1423; first pair longest and plainly stoutest.

The abdomen is rather wide and heavy for the size of the spider. The maxillæ are broad and obtusely rounded. The labium is about as wide as long. The falces are short, vertical and parallel; the sternum is oval. The femur, patella and tibia of the first leg are much thickened in both sexes—the femur especially being short and heavy. In the male the femur of the second leg is also somewhat thickened. The male has projecting forward from the upper part of the falces a pair of horns, which first curve inward and then outward, and near the distal end are sharply bent, so that the tips cross each other.

In the female the entire cephalothorax is covered with white hairs; there is a pair of black spots on the cephalic part, which are only visible when the hairs are rubbed off. The face is covered with long, white hairs. The abdomen is also white and has two longitudinal rows of dark brown spots throughout the length of the dorsum. Close to the spinnerets these spots join each other, forming two or three chevrons. In the male the cephalothorax has a wide white band on each side and one down the middle, the rest of the surface being covered with reddish-yellow hairs which grow thickly around the anterior eyes. The narrow clypeus is covered with short, stiff, white hairs. The abdomen, in our single male, has the hairs nearly all rubbed off. It seems to have been much like that of the female, except that the general color of the integument is darker and that the dark spots seem to have been separated by yellow, instead of by white, hairs. The falces and horns are dark brown. The first and second legs in the male are dark brown above and black beneath, with a good many short, white hairs. The third and fourth, like all the legs in the female, are yellowish, with black spines. The palpus in the male is black with some white hairs. In the female it is paler than the legs.

This species, of which we have one male and several females, from Madagascar, is much like Padilla cornuta in the shape of the cephalothorax and in the thickening of the first legs. In cornuta, however, the abdomen is much more slender and graceful and is marked with longitudinal bands instead of with spots; and the horns are almost straight, while in armata they have a double curve.

SADALA PECKHAM.

Plate XIII., Figs. 4—4*b*.

Small, flat spiders, with long, pointed abdomens.

The cephalothorax is rather low, and is wide in proportion to its length. It is flattened above and is widest behind the dorsal eyes. The sides are not quite vertical. The quadrangle of the eyes is from one-fourth to one-third wider than long, is equally wide in front and behind, or wider in front, and occupies at least two-fifths of the cephalothorax. The anterior eyes are in a straight or slightly curved row, the middle being from two-and-a-half to three times as large as the lateral eyes. The middle eyes are close together, the lateral a little separated from them. The second row is plainly nearer the first than the third. The third row is nearly as wide as the cephalothorax at that place. The eyes of this row are further from each other than from the lateral borders.

This genus is very near Anoka, but Anoka is wider and not so flat. It is not so low, nor so long in proportion to its width as Goleta; in this latter genus, moreover, the cephalic part occupies only one-third of the cephalothorax, and the cephalothorax is twice as long as wide; and the first row of eyes is curved downward.

Sadala is most easily distinguished from Balmaceda and Omura by the greater relative size of the middle eyes of the first row. The cephalothorax is flatter, as a whole, in Balmaceda, almost the whole thorax being on the same plane with the cephalic part. The abdomen is flattened in Balmaceda and cylindrical in Sadala.

Sadala is smaller and lower than Itata. It is higher than Padilla, and the level part of the thorax is not so long as in that genus, where the thoracic part is on the same plane as the cephalic throughout its length. In Padilla the cephalothorax widens out more than in Sadala, and the middle eyes of the first row are not so large.

We have seven species of these genus, all from Central and South America. The type, Sadala distincta P. is described in N. A. Attidæ, p. 53. The other species are fenestrata (Mævia fenestrata) Tacz., Arachnides du Perou, p. 327; Stolzmanii (Mævia Stolzmanii) Tacz., *ibid*, p. 329, and four new species.

SADALA MAGNA SP. NOV.

Plate XIII., Figs. 5—5*e*.

♂. Length, 6.4. Length of cephalothorax, 2.6; width of cephalothorax, 1.8.

Legs, $\overline{14}23$; first and second pairs stoutest.

♀. Length, 7.3. Length of cephalothorax, 3; width of cephalothorax, 1.9.

Legs, $413\overline{2}$.

The cephalothorax is thickest (from above below) just in front of the posterior thoracic slope. This point seems to be a little the highest, also, the upper surface sloping very slightly forward to the first row of eyes. There is a central depression behind the dorsal eyes. The cephalothorax is narrowest in front and widest in the central thoracic part. The upper surface is flattened through the cephalic and two-thirds of the thoracic part. The sides round outward in the thoracic part much more widely than in front. The quadrangle is a little wider in front than behind and is about one-fourth wider than long. In the male it occupies two-fifths of the length of the cephalothorax; in the female a trifle less. The anterior eyes are close together in a straight row, the middle being nearly three times as large as the lateral. The second row is close to the first. The third is not so wide as the cephalothorax. The clypeus is narrow. The falces, in both sexes, are short, stout

and vertical. The sternum is long. The maxillæ are twice as long as the labium and are truncated.

The general color of the male is very dark brown. The scaly eye region is red (not gold color as in gemmea, horatia and others), with two black spots behind the middle. Along each upper side is a narrow band of white hairs (as in horatia) extending below the eyes on to the thorax. The eyes are surrounded by orange-colored hairs. The abdomen has, on each side, a narrow band of white hairs, and has, also, a white spot near the posterior end, which is divided in the middle by a black line. This spot may be all that remains of the median, longitudinal white band which we find in the female. The palpi are dark brown. The first and second legs (except the tarsal joints, which are yellowish) and the falces are dark brown and iridescent. The third and fourth legs are dark brown as far as the tibia, but have the tibia, metatarsus and tarsus yellowish.

The female, as is usual in Sadala, is much lighter colored than the male. The cephalothorax is reddish-yellow. The eyes, except the middle ones of the first row, are black and are placed on black spots, and around them are white hairs. The anterior part of the eye region is covered with gold-colored scales. A little behind the middle of the eye region are two faint, blackish spots. From the post-ocular depression arise a number of diverging rays of a lighter yellow than the ground color, which pass over the back and sides. The anterior middle eyes are yellow and are surrounded by white hairs. The clypeus is covered with white hairs. The pattern of the abdomen, owing to injury, is somewhat indistinct. The general color is pale brown; there are four or five darker, curved, transverse bands crossing the dorsum, these bands being interrupted in the middle line by a longitudinal, scaly, white band, which is itself divided down the middle by a dark line. The lower sides are covered with white scales. The pattern suggests that of Sadala gemmea. The legs, falces and palpi are light yellow.

One male and one female from Brazil.

SADALA GEMMEA SP. NOV.

Plate XIV., Figs. 1—1*e*.

This species has a large and a small variety.

♂. (Large variety.) Length, 6. Length of cephalothorax, 2.5; width of cephalothorax, 1.4.

The total length of the small variety is 4.5.

♀. (Large variety.) Length, 6.5. Length of cephalothorax, 2.4; width of cephalothorax, 1.3.

The total length of the small variety is 5.

Legs, ♂, 1423; first pair plainly stoutest. ♀, 4132.

The cephalothorax is rather low. Its under surface falls from the anterior end, so that, although the upper surface is flat from the anterior eyes through two-thirds of the thorax, its thickest point, from above below, is just before the posterior slope to the margin. This slope is quite abrupt. The widest point of the cephalothorax coincides with the thickest, the sides widening gradually from the anterior end. The sides slope outward more widely in the thoracic than in the cephalic part. The quadrangle of the eyes is about one-fourth wider than long, is equally wide in front and behind, and occupies about two-fifths of the cephalothorax. The first row is straight; the eyes are close together, the middle being two-and-a-half times as large as the lateral. The second row is nearer the first than the third. The third is not so wide as the cephalothorax.

The falces in the male are long and obliquely directed, with a long, toothed fang; in the female they are very small, short and vertical. The sternum in the male is wide and rounded; in the female, long and narrow. The maxillæ are about twice as long as the labium. The labium is a little longer than wide.

In the male the color is a bright brown, tinged with golden on the cephalic plate, with a thin covering of yellow hairs. There is a white band on each side of the caput, below the two lateral eyes, and on each side of the thorax are two white bars, running obliquely downward. The anterior end of the abdomen has a tuft of yellow hairs projecting forward, and a

curved band of white. The central anterior part of the dorsum has a white, longitudinal band, ending in a short, transverse bar. Just behind this, on each side, is an oblique, white bar, which passes downward. The posterior half of the dorsum has three short, transverse, white bars, the last of them being at the insertion of the spinnerets. The palpi and falces are bright brown. The clypeus is covered with white hairs. The legs are bright brown, the first and second pairs being the darkest.

The cephalothorax of the female is bright brown, with the cephalic plate golden, and with two darker bands extending from the dorsal eyes to the posterior border. There are yellow hairs around all of the eyes. The abdomen is pale fawn color, irregularly spotted, on the sides, with dark brown, the spots being variable in size. The anterior half of the central dorsum is occupied by two pairs of large, dark brown spots, which are close together; the posterior half by two large, dark brown spots, which look as though two pairs had coalesced. Behind these are some faint, transverse, brown bars. The venter is brown, spotted all over with white. The legs and palpi are light yellowish-brown. The clypeus is covered with short, white hairs. The markings recall those of Anoka mitrata.

We have numerous specimens from Brazil (Smith collection).♦

SADALA HORATIA SP. NOV.

Plate XIV., Figs. 2—2*e*.

♂. Length, 5. Length of cephalothorax, 2; width of cephalothorax, 1.3.

Legs, 1423; first and second pairs stoutest.

♀. Length, 5.4. Length of cephalothorax, 2; width of cephalothorax 1.2.

Legs, 4132; first pair a little the stoutest.

The cephalothorax differs from that of gemmea and magna in being of about the same thickness, from above below, throughout its length. It is rather low and the upper surface is flat through the cephalic and rather more than half of the thoracic part. It is narrowest in front and widest behind the dor-

sal eyes. The sides are nearly vertical at the anterior end, but in the thoracic part they round outward. The quadrangle of the eyes is one-fourth wider than long, and a very little wider in front than behind. It occupies two-fifths of the cephalothorax. The first row of eyes is slightly curved downward, that is, the tops of the middle eyes are slightly higher than the tops of the lateral eyes. They are all close together, the middle being two-and-one-half times as large as the lateral. The second row is nearer the first than the third. The third row is not so wide as the cephalothorax at that place.

The clypeus is narrow. The falces of the male are obliquely directed forward; they are rather long and stout, with a long fang. Those of the female are short and vertical. The sternum is wide (wider in the male than in the female) and rounded. The maxillæ are rounded and are twice as long as the labium.

In the male the cephalothorax is dark reddish-brown. On the upper anterior part is a region which extends a little back of the dorsal eyes, narrowing behind, which is of a bright gold color. Crossing this region, in front of the dorsal eyes, is a dark brown band, which is sometimes concentrated into two black spots. The hairs around the anterior eyes are yellow. On each upper side, just below the eyes, is a narrow band of white hairs extending a little farther back than the dorsal eyes. The abdomen is brown. Around the sides and anterior end runs a narrow band of white hairs. Across the dorsum are four curved bands, or transversely elongated spots, of a darker brown. The drawing represents the spider as it appears under alcohol. The space between the bands was probably originally covered with white hairs. The clypeus is covered with white hairs. The falces are bright brown. The first and second legs and the palpi are dark brown; the third and fourth legs reddish-yellow, with the femoral joints dark brown.

In the female the cephalothorax is bright reddish-yellow. The eye region is gold color, with two central black spots, from which spring, in one specimen, some tufts of black hairs. The eyes are on black spots. There are some yellow hairs on the

sides of the cephalic part. The clypeus is covered with white hairs. The legs and palpi are reddish-yellow; the falces are a shade darker and redder. The abdomen is pale, with four transverse, curved, brown bands, between which are silvery-white hairs.

As in Sadala gemmea, the whole appearance of this female suggests that of Anoka mitrata. We have numerous specimens from Santarem, Brazil (Smith collection).

SADALA DESERTA SP. NOV.

Plate XIV., Figs. 3—3*e*.

♂. Length, 5.2. Length of cephalothorax, 2.5; width of cephalothorax, 1.5.

Legs, $\overline{14}\,\overline{23}$; first and second pairs stoutest.

♀. Length, 5. Length of cephalothorax, 2; width of cephalothorax, 1.2.

Legs, $41\overline{32}$; first pair a little the stoutest.

The cephalothorax is rather low, and is shaped very much like that of gemmea. The under surface slopes downward, so that the cephalothorax is thicker, from above below, in the thoracic part than it is in front. Above it is flat through the caput and three-fourths of the thorax. There is a circular post-ocular depression, from which light colored rays diverge, as in magna. The widest point is in the thorax, well behind the dorsal eyes, and the sides slope outward more in the thorax than in the anterior part. The clypeus slants backward. The quadrangle is one-fourth wider than long, is equally wide in front and behind, and occupies about two-fifths of the length of the cephalothorax. The anterior eyes are slightly separated and form a straight line, the middle being a little more than twice as large as the lateral. The second row is plainly nearer the first than the third. The third row is narrower than the cephalothorax.

The falces are short and vertical in the female; stouter, longer, obliquely directed forward and having a long fang in male. The labium is longer than wide. The maxillæ are

nearly twice as long as the labium and are truncated. The sternum is rather large and wide.

We have two males, one of which is much darker than the other. The general color of the cephalothorax is dark bronze-brown. There are narrow bands of white hairs on the upper sides, extending below the eyes on to the thorax, as in several other species of this genus. The scaly region on the anterior part of the head is reddish-gold in the lighter specimen; in the other it is of the same color as the rest of the cephalothorax, but is slightly iridescent. In both specimens two, indistinct, dark spots are visible in the middle of the eye region. The clypeus has a fringe of snow-white hairs. The falces, palpi and first and second pairs of legs are medium brown; the third and fourth pairs are much lighter, the femoral joints being slightly darkened. The abdomen has two pairs of dark spots on the anterior half and two larger central spots on the posterior, with one or two dark bands or lines near the spinnerets. In some cases the spots on the anterior half are joined together, so that there are four large spots on the dorsum. A line of white hairs extends around the anterior end and halfway on to the sides, and the posterior half has an oblique white bar on each side. The spaces between the spots seem to have been entirely covered with snow-white hairs, but these are almost entirely rubbed off, showing the light brown integument.

The coloring of the female is substantially like that of the male, though all the tints are lighter. In some of the males the legs and palpi are very dark brown. In others, as in the female, they are bright golden-brown.

We have several males and females from Rio de Janeiro, in the Smith collection.

ASHTABULA GEN. NOV.

Small spiders. Males with tibia of first leg much enlarged and having a heavy fringe of hairs.

The cephalothorax is low and almost flat. It is widest at the dorsal eyes, narrowing a little in front and more plainly

behind. The thoracic part falls but little until the posterior end. The posterior slope is hollowed. The sides are nearly vertical. In the female, the cephalothorax is not so much contracted in front and behind as in the male. The quadrangle of the eyes is one-fifth wider than long, is slightly wider behind than in front, and occupies one-half of the length of the cephalothorax. The first row is straight; the eyes are large, the middle being nearly double the size of the lateral; they are all sub-touching. The second row is a little nearer the first than the third row. The third is as wide as the cephalothorax at that place. The falces are short and vertical, and are about as wide as long. The maxillæ are more than twice as long as the labium.

The first leg of the male has the femur and tibia enlarged, the tibia, especially, being thick and long, with a heavy fringe of hairs on the inner side.

The abdomen is small, slender and pointed behind.

The general appearance of Ashtabula is similar to that of Rudra, but Rudra is lower and flatter. It is separated from all the other genera of the group by the curiously enlarged first legs, which seem to make it a connecting link between the Marptusa group and the genus Chirothecia.

ASHTABULA ZONURA SP. NOV.

Plate XIV., Figs. 4—4*e*.

♂. Length, 3.5. Length of cephalothorax, 1.8; width of cephalothorax, 1.2.

Legs, 1423; first pair much the longest and stoutest, with the femur and tibia enlarged.

♀. Length, 4. Length of cephalothorax, 1.5; width of cephalothorax, 1.

The first leg is enlarged. We cannot get the relative length, as some of them are broken.

The male has the cephalothorax of a bright brown color with a covering of white hairs. These grow thickly at the anterior part of the eye region, in two bands, which run through,

the length of the cephalothorax, just below the side eyes, and in a narrower band around the lower margin. The abdomen is of a much lighter brown, with a slight golden tinge, with two longitudinal white bands running down the sides and four or five slender, dark, transverse bands crossing the dorsum. The whole surface has a thin covering of white hairs. The first legs have the femur, patella and tibia brown, and the metatarsus and tarsus pale and colorless. The other legs are all pale, with dark rings at the joints. The palpi and falces are brown.

Our only female is much damaged, but seems to have resembled the male. The femur of the first leg is enlarged, but as the other joints are broken off, we cannot say how closely the tibia is like that of the male.

We have three males and one female from New Grenada.

EXPLANATION OF PLATES.

PLATE VIII.

Fig. 1, Marptusa mucosa, dorsal view of female; 1*a*, face and falces; 1*b*, side view of cephalothorax.

Fig. 2, Marptusa familiaris, dorsal view of female; 2*a*, face and falces; 2*b*, side view of cephalothorax.

Fig. 3, Marptusa magna, dorsal view of female; 3*a*, epigynum.

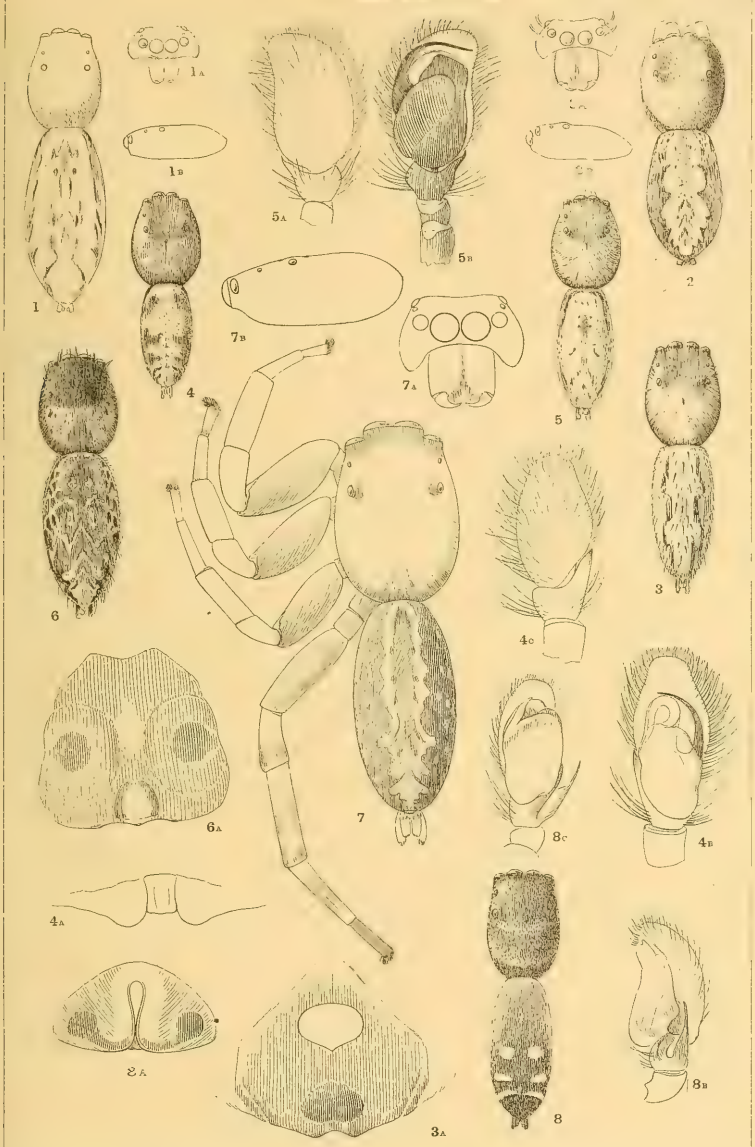
Fig. 4, Marptusa agricola, dorsal view of female; 4*a*, epigynum of young female; 4*b* and 4*c*, male palpus.

Fig. 5, Marptusa broadwayi, dorsal view of female; 5*a* and 5*b*, male palpus.

Fig. 6, Marptusa millerii, dorsal view of female; 6*a*, epigynum.

Fig. 7, Breda milvina, dorsal view of female, x 6; 7*a*, face and falces; 7*b*, side view of cephalothorax.

Fig. 8, Balmaceda punctata, dorsal view of female, x 8; 8*a*, epigynum; 8*b* and 8*c*, male palpus.



J H.Emerton, from nature.

E. Crisand, lith., New Haven, Ct

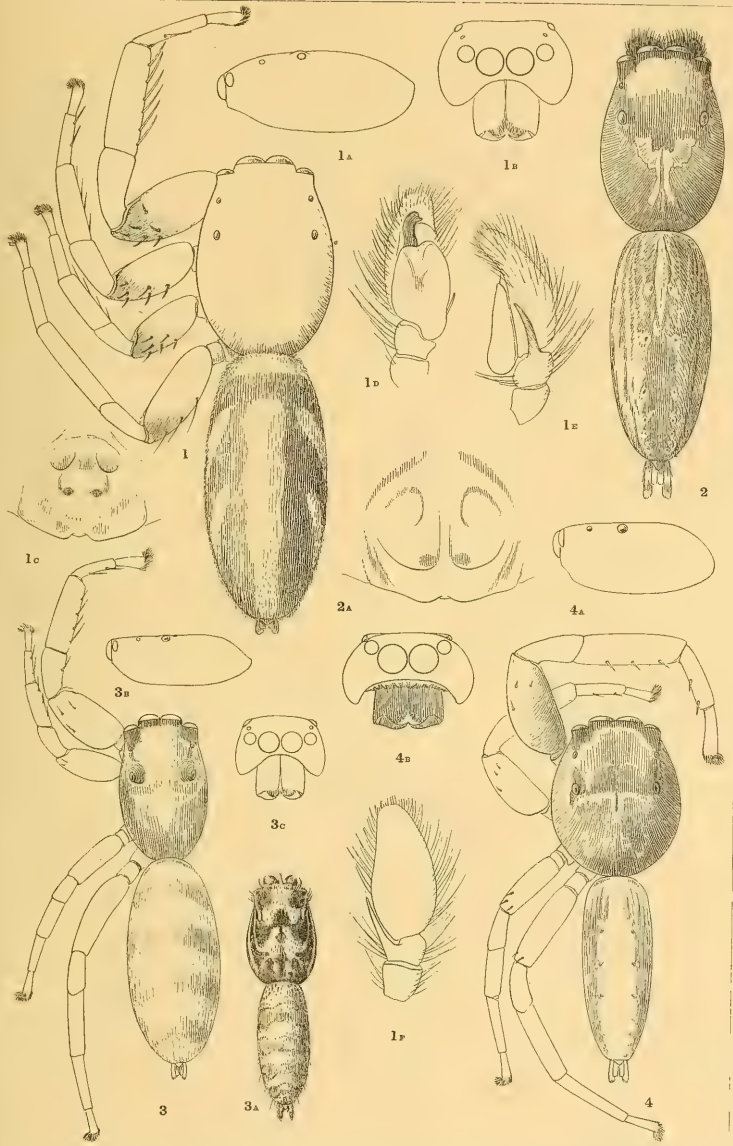
PLATE IX.

Fig. 1, Epinga chapoda, dorsal view of female; 1*a*, side view of cephalothorax; 1*b*, face and falces; 1*c*, epigynum; 1*d*, 1*e* and 1*f*, male palpus.

Fig. 2, Epinga barbarica, dorsal view of female; 2*a*, epigynum.

Fig. 3, Deza sumptuosa, dorsal view of female; 3*a*, dorsal view of male; 3*b*, side view of cephalothorax; 3*c*, face and falces.

Fig. 4, Bavia æriceps, dorsal view of female; 4*a*, side view of cephalothorax; 4*b*, face and falces.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3B
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3C
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3A
1F
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PLATE X.

Fig. 1, Balmaceda picta, dorsal view of female; 1*a*, side view of cephalothorax; 1*b*, face and falces; 1*c*, epigynum; 1*d*, 1*e* and 1*f*, male palpus.

Fig. 2, Omura cruenta, dorsal view of female; 2*a*, face and falces; 2*b*, side view of cephalothorax; 2*c*, epigynum.

Fig. 3, Omura perita, dorsal view of female; 3*a*, epigynum.

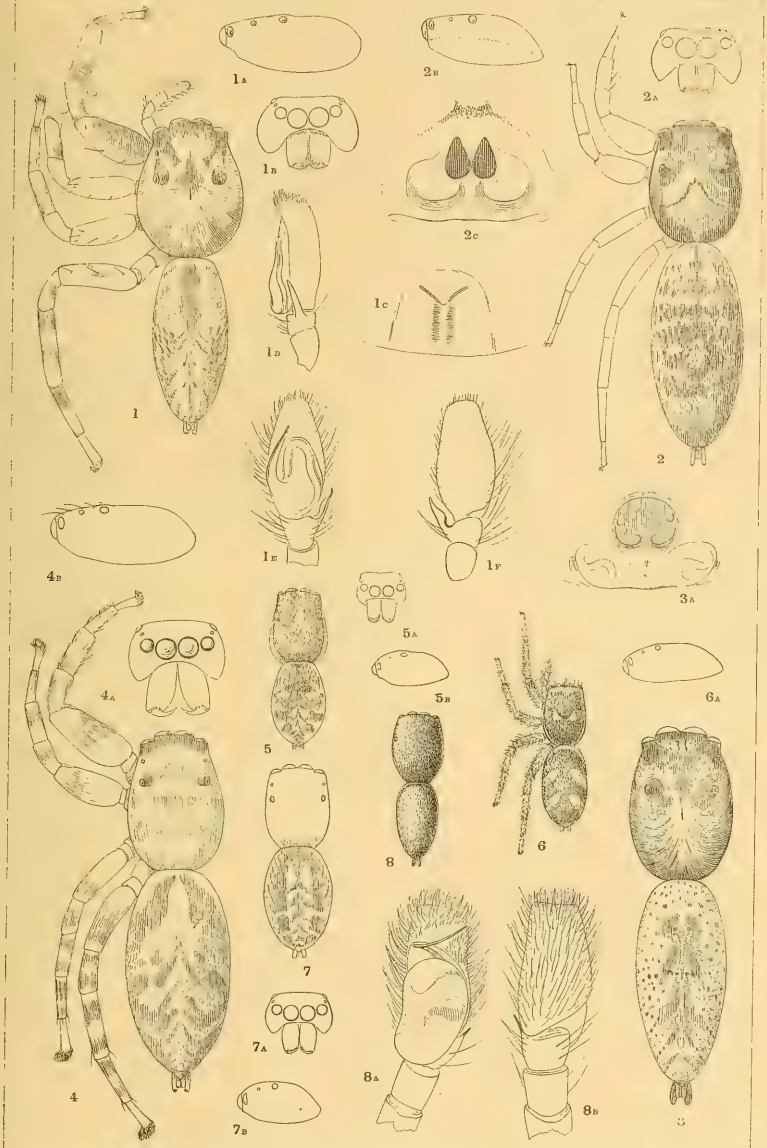
Fig. 4, Mendoza memorabilis, dorsal view of female; 4*a*, face and falces; 4*b*, side view of cephalathorax.

Fig. 5, Menemerus semi-limbatus, dorsal view of female; 5*a*, face and falces; 5*b*, side view of cephalothorax.

Fig. 6, Epiblemum scenicum, dorsal view of female; 6*a*, side view of cephalothorax.

Fig. 7, Icius notabilis, dorsal view of female; 7*a*, face and falces; 7*b*, side view of cephalothorax.

Fig. 8, Icius wickhamii, dorsal view of male; 8*a* and 8*b*, male palpus.



J.H.Emerton, from nature.

E. Crisand, lith., New Haven, Ct.

PLATE XI.

Fig. 1, Pseudicius encarpatus dorsal view of female; 1*a*, face and falces; 1*b*, side view of cephalothorax.

Fig. 2, Pseudicius oblongus, dorsal view of female, x 6; 2*a*, epigynum.

Fig. 3, Pseudicius cognatus, dorsal view of female, x 6; 3*a*, epigynum.

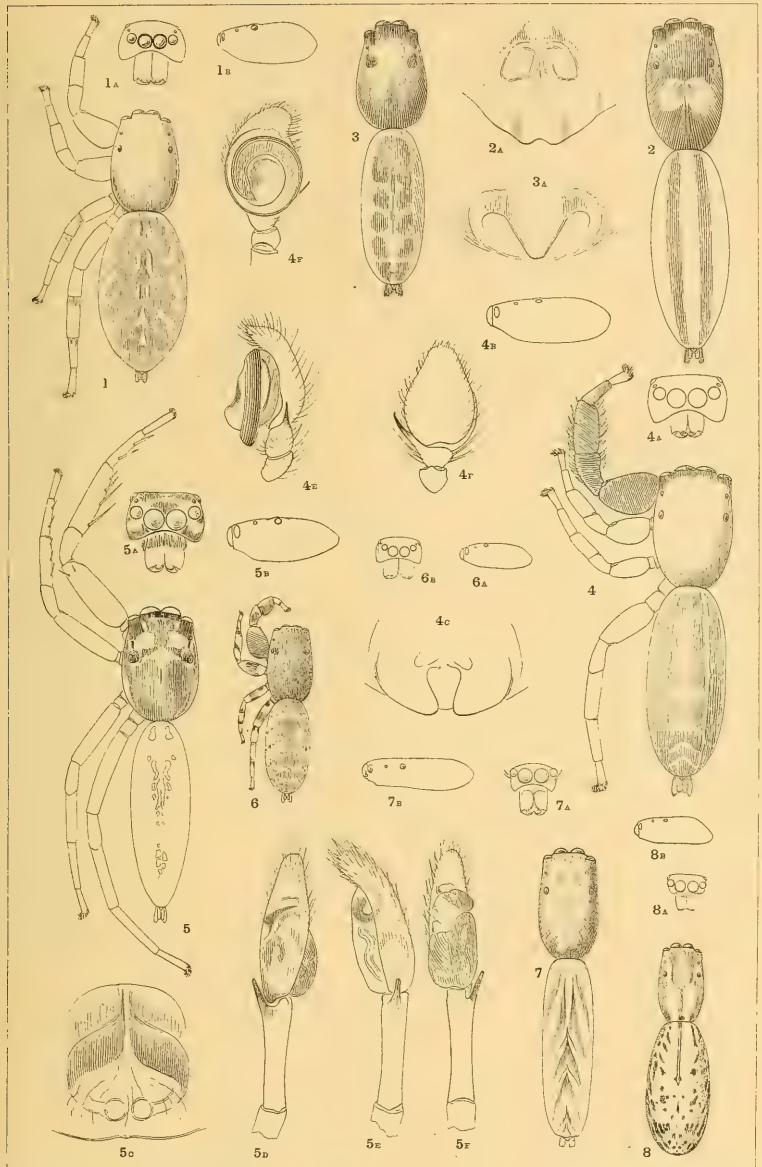
Fig. 4, Fuentes pertinax, dorsal view of female, x 8; 4*a*, face and falces; 4*b*, side view of cephalothorax; 4*c*, epigynum; 4*d*, 4*e* and 4*f*, male palpus.

Fig. 5, Itata vadia, dorsal view of female; 5*a*, face and falces; 5*b*, side view of cephalothorax; 5*c*, epigynum; 5*d*, 5*e* and 5*f*, male palpus.

Fig. 6, Admestina wheelerii, dorsal view of male, x 8; 6*a*, side view of cephalothorax; 6*b*, face and falces.

Fig. 7, Hyctia pikei, dorsal view of female, x 8; 7*a*, face and falces; 7*b*, side view of cephalothorax.

Fig. 8, Hyctia nivoyi, dorsal view of female; 8*a*, face and falces; 8*b*, side view of cephalothorax.



H. Ehrmann from nature

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PLATE XII.

Fig. 1, Spadera unica, dorsal view of male; 1*a*, side view of cephalothorax; 1*b*, face and falces; 1*c*, 1*d* and 1*e*, male palpus.

Fig. 2, Helvetia santarema, dorsal view of female; 2*a*, side view of cephalothorax; 2*b*, face and falces; 2*c*, epigynum; 2*d*, epigynum of a second individual.

Fig 3, Rudra geniculata, dorsal view of female, x 6; 3*a*, side view of cephalothorax; 3*b*, face and falces.

Fig. 4, Rudra polita, dorsal view of female, x 8; 4*a*, epigynum.

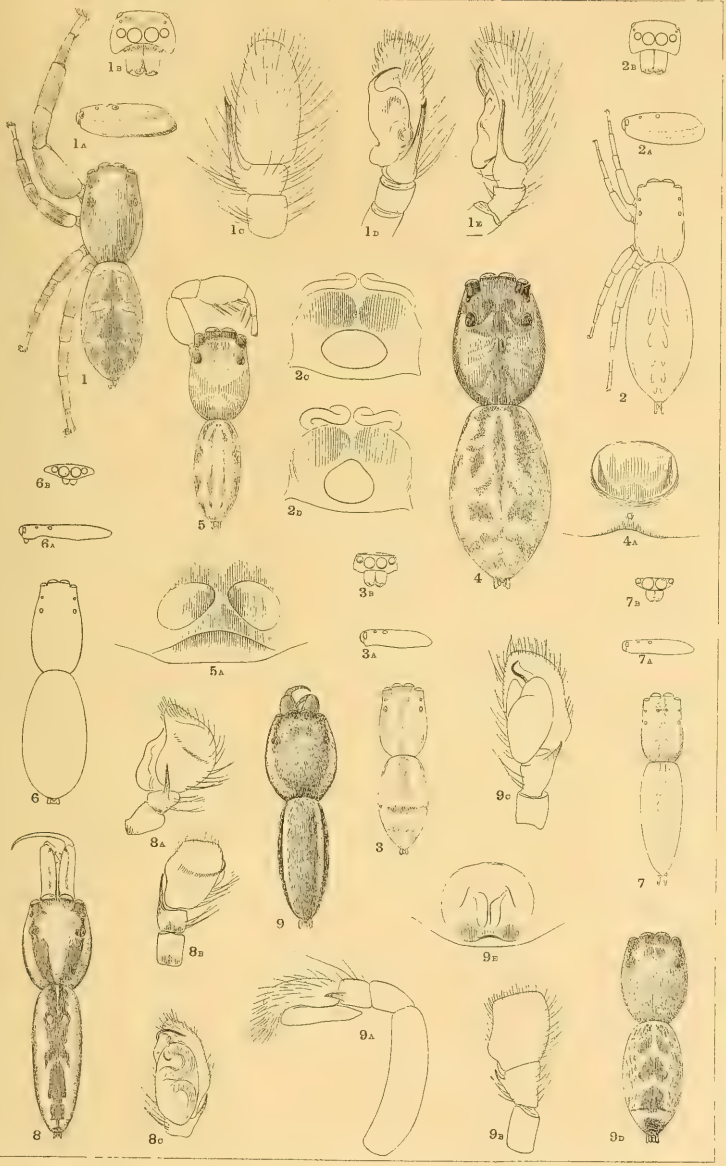
Fig. 5, Rudra tenera, dorsal view of female; 5*a*, epigynum.

Fig. 6, Holoplatys planissima, dorsal view of female, x 6; 6*a*, side of cephalothorax; 6*b*, face and falces.

Fig. 7, Goleta workmanii, dorsal view of female, x 8; 7*a*, side view of cephalothorax; 7*b*, face and falces.

Fig. 8, Anoka grenada, dorsal view of male, x 8; 8*a*, 8*b* and 8*c*, male palpus.

Fig. 9, Anoka moneagua, dorsal view of male, x 8; 9*a*, 9*b* and 9*c*, male palpus; 9*d*, dorsal view of female, x 8; 9*e*, epigynum.



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E. Crisand, lith., New Haven, Ct.

PLATE XIII.

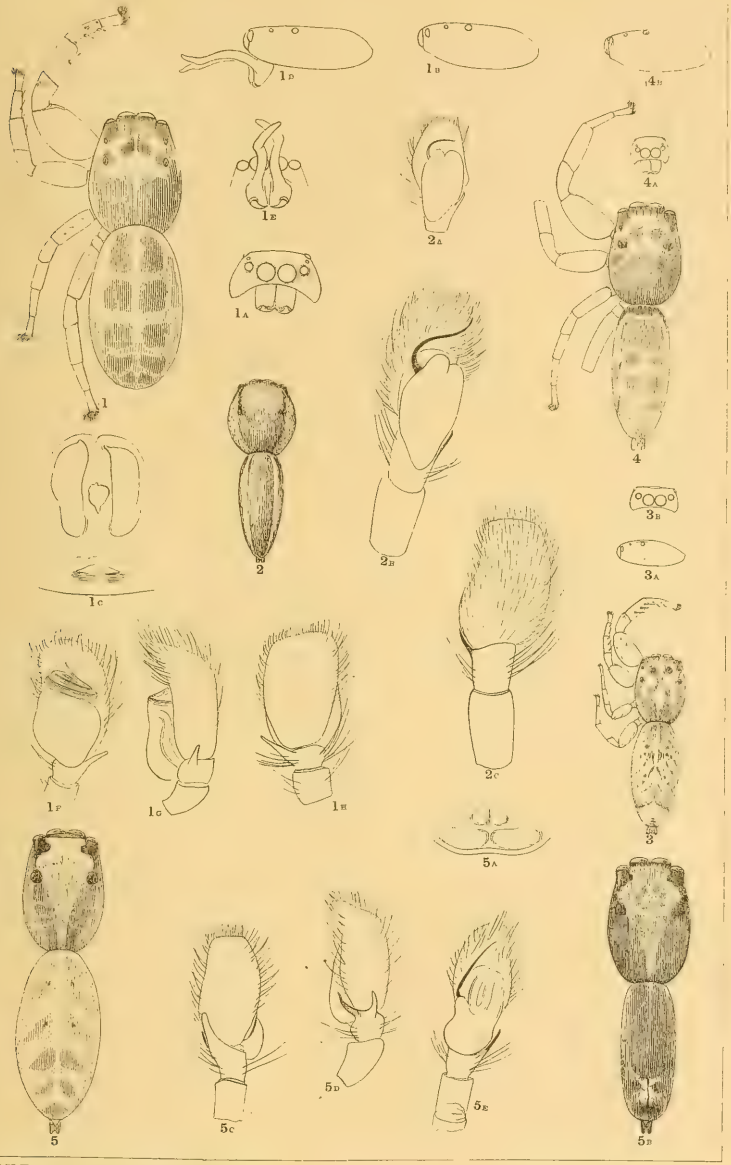
Fig. 1, Padilla armata, dorsal view of female, x 8; 1*a*, face and falces of female; 1*b*, side view of cephalothorax of female; 1*c*, epigynum; 1*d*, side of cephalothorax of male, showing horns; 1*e*, falces of male, from below; 1*f*, 1*g* and 1*h*, male palpus.

Fig. 2, Anoka parallela, dorsal view of male, x 6; 2*a*, male palpus; 2*b* and 2*c*, palpus of a second male.

Fig. 3, Anoka vernalis, dorsal view of female, x 6; 3*a*, side of cephalothorax; 3*b*, face.

Fig. 4, Sadala distincta, dorsal view of male; 4*a*, face and falces; 4*b*, side view of cephalothorax.

Fig. 5, Sadala magna, dorsal view of female; 5*a*, epigynum; 5*b*, dorsal view of male; 5*c*, 5*d* and 5*e*, male palpus.



J.H.Emerton, from nature.

E. Crisand, lith., New Haven Ct

PLATE XIV.

Fig. 1, Sadala gemmea, dorsal view of female, x 8; 1*a*, epigynum; 1*b*, dorsal view of male, x 8; 1*c*, 1*d* and 1*e*, male palpus.

Fig. 2, Sadala horatia, dorsal view of female; 2*a*, epigynum; 2*b*, dorsal view of male; 2*c*, 2*d* and 2*e*, male palpus.

Fig. 3, Sadala deserta, dorsal view of female, x 8; 3*a*, epigynum; 3*b*, dorsal view of male, x 8; 3*c*, 3*d* and 3*e*, male palpus.

Fig. 4, Ashtabula zonura, dorsal view of male; 4*a*, side view of cephalothorax. 4*b*, face and falces; 4*c*, 4*d* and 4*e*, male palpus.

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